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MASSACHUSETTS 1986

FEED SEED AND FERTILIZER REPORT

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Massachusetts Department of Food and Agriculture
100 Cambridge Street
Boston, MA 02202

PREFACE

This publication consists of reports of the work assigned to the Massachusetts Agricultural Experiment Station by authority of the Feed Act (General Laws, Chapter 128, Sections 51 to 63 inclusive), the Seed Act (General Laws, Chapter 128, Sections 84 to 100 inclusive), and the Fertilizer and Liming Materials Act (General Laws, Chapter 128, Section 64 to 83 inclusive).

Included are Feed Report (Number 91 for the year 1986, Seed Laboratory Report (Number 59 for the year 1986, and the Fertilizer and Liming Material Report (Number 112 for the year 1986.

For information concerning this report on the analyses of feeds, seeds, fertilizers, liming material, and for information concerning certification of milk fat testing equipment and certification of operators of milk fat testing equipment, please write to:

Official Chemist
Feed, Seed, Fertilizer Laboratory
University of Massachusetts
West Experiment Station
Amherst, MA 01003

Regulatory Information

Feed, Seed, Fertilizer Control Official: Registration of Feed, Fertilizer, and Liming Products write to:

James M. Cassidy
Control Officer
Massachusetts Department of Food & Agriculture
100 Cambridge street
Boston, Massachusetts 02202

Telephone: 617-727-3026

For information concerning companies registered for the year please contact the Control Officer at the above address.

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DEPARTMENT OF FOOD AND AGRICULTURE REGULATORY
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Daniel J. Burns - Market Investigator
Earl H. Goodrich - Market Investigator
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INSPECTION OF COMMERCIAL FEEDSTUFFS

Report Number 91 for the Fiscal Year

Ending 1986

By the Feed Laboratory Staff

of the Feed, Seed, and Fertilizer Laboratory

West Experiment Station, Amherst, MA 01003

UNIVERSITY OF MASSACHUSETTS
COLLEGE OF FOOD & NATURAL RESOURCES
AGRICULTURAL EXPERIMENT STATION

Director, E. Bruce MacDougall

FEED & FERTILIZER STAFF:

Edward F. Vlach, Official Chemist in Charge
Paul Korpita, Senior Chemist
David Houle, Assistant Chemist
John Melnick, Technical Assistant
Betty A. Start, Statistical Typist

Brands Substantially Complying with Guarantees

Manufacturer & Brand	Number Samples Analyzed
AGWAY, INC.	
Agway 44% Pro Blend	2
Agway Ratio-Right 200-40	2
Agway Pro-Right 2000-40	5
Agway 37% Hog Concentrate	3
Agway Pro-Right 2500-32 HMC Balancer	1
Agway Country Game & Turkey Starter	3
Agway Bloom for Horses	2
Agway Country Game & Turkey Starter Crumbles	1
Agway Pro-Right RC 3000-26	1
Agway Pro-Right RC 3500-24	1
Agway Pro-Right RC 4000-22	5
Agway Country Game & Turkey Grower	5
Agway Country Game & Turkey Grower Pellets	3
Agway Country Egg Producer	2
Agway Ratio-Right 450-20	1
Agway Pro-Right RC 4500-20	7
Agway Ratio-Right 400-20	5
Agway Nu-Cashmaker 18 Pellets	1
Agway Mare 'N Foal	5
Agway Pro-Right RC 5000-18	3
Agway Pig Starter (MX-PT) Pellets	3
Agway Broiler Finisher (MN #90)	1
Agway Country Game & Turkey Breeder	1
Agway Country Game & Turkey Feed	7
Agway Country Game & Turkey Feed Pellets	3
Agway Country Egg Layer Bits	4
Agway Country Egg Layer Shorties	6
Agway Country Egg Layer Pellets	6
Agway 16% Sow & Pig Feed Pellets (T40)	7
Agway Milk-Right 16 (NU)	6
Agway Country Egg Layer Mash	10
Agway Ratio-Right 501-16	10
Agway Meyer's Mink Feed (CMD 2910)Pellets	1
Agway Big Red Special Rabbit Pellets	9
Agway Country Chicken Grower Bits	7
Agway Gestating Swine Feed Pellets	4
Agway Performance for Horses	4
Agway Early Market Lamb Pellets	2
Agway 14% Hog Feed (T20)	4
Agway 14% Hog Feed Pellets (T20)	6
Agway Choice for Horses	6
Agway Complete Horse Feed Pellets	1
Agway Respond Complete Horse Feed	1
Agway TCR #11 (Total Calf Ration)	3
BEATRICE CO., INC. SPECIALTY PET PRODUCTS	
ANF 30 Dog Food	1

Brands Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
BEATRICE CO., INC. SPECIALTY PET PRODUCTS (Cont'd)	
ANF 24 Dog Food	1
BERNARDSTON GRAIN MILL, INC.	
Excel Pig Starter	1
Pig Grower & Starter	1
CARNATION CO.	
Calf Manna	1
Lamb Milk Replacer	1
Guinea Pig Pellets	1
Turkey Grower Pellets	1
Turkey Grower Bits	1
Duck Grower & Breeder Pellets	1
Rabbit Family Ration 18 Pellets	1
Family Farm Hog Grower Pellets	1
Carnation Double Duty Rabbit Pellets	2
Carnation Turkey Finisher Pellets	1
Carnation Egg Maker 15 Pellets	1
Family Farm Egg Maker 15 Pellets	1
Family Farm Egg Maker 13 Mash	1
Carnation Round-up Pellets	1
CONAGRA, INC: FRUEN DIV.	
Cherokee Toasted Steamed Rolled Barley Flakes	1
CONAGRA PET PRODUCTS CO., INC.	
Geisler Parakeet Diet Vitamin & Mineral Enriched	1
Geisler Canary Diet Vitamin & Mineral Enriched	1
Geisler Alfalfa Treat Aviary Grade	1
GENERAL FOODS CORP.	
Gaines Gravy Train Dog Food, Beef Liver & Bacon Flavor	1
HILL'S PET PRODUCTS, INC.	
Hill's Science Diet Feline Growth Cat Food	1
Hill's Science Diet Domestic Feline Cat Food	1
Hill's Science Diet Feline Maintenance Cat Food	1
Hill's Science Diet Canine Growth Dog Food	1
Hill's Science Diet Canine Maintenance Dog Food	1
Hill's Science Diet Canine Senior Professional	1
THE IAMS COMPANY	
Eukanuba Dog Food	2
INTERNATIONAL MULTIFOOD CORP.	
Blackhawk Wheat Bran/Ground Wheat Screenings	1

Brands Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
KELLOGG, INC.	
Kellogg's Petamine Bird Diet	1
MARTIN'S FEED MILL, INC.	
Bench & Field Dog Food Concentrated Pellets	1
MILK SPECIALTIES CO.	
Start to Finish Pellets	1
MOYER & SON, INC.	
Five-Star Special Breeding Pigeon Feed Mix	1
NUTRENA FEED DIV., CARGILL, INC.	
Fort Orange Turkey Grower	1
Fort Orange Complete Rabbit Pellets	2
Nutrena Vitality 18 Plus (D) Horse Feed Apple Flavored	1
Nutrena M Auto Egg Feed Pellets	1
Nutrena M Auto Egg Feed Mash	1
Nutrena Rabbit Pellets (D)	1
Fort Orange Milkmaster 16 Pellets	1
Fort Orange Pig & Hog Feed	3
Fort Orange Turkey Finisher	2
Nutrena Egg Ration A Pellets	1
Nutrena Egg Ration A Mash	1
Nutrena Vitality 14% Horse Feed (D) Pellets	2
Nutrena Vitality 14 Sweet Feed (D)	1
Nutrena Triumph 12 Horse Feed	1
Nutrena Horse Kwik Ration D	1
Nutrena Horse Kwik Ration D (With Roughage) Pellets	2
Fort Orange Complete Horse Feed	1
Nutrena Whole Oats (D)	1
OLD FOX CHEMICAL, INC.	
Liquid Pro-Pr-32% Pasture & Range Supplement	1
OLD MOTHER HUBBARD DOG FOOD CO.	
Old Mother Hubbard Dog Bone Biscuits Small	1
Old Mother Hubbard Kibbled Biscuits Dog Food Small	1
Old Mother Hubbard Dog Bone Biscuits Jumbo Assorted	1
Old Mother Hubbard Dog Bone Biscuits Jumbo	1
Old Mother Hubbard Dog Bone Biscuits Large	1
Old Mother Hubbard Dog Bone Biscuits Charcoal	1
Old Mother Hubbard Dog Bone Biscuits Extra Large	1
Old Mother Hubbard Dog Bone Biscuits Cakes	1
Old Mother Hubbard Dog Bone Biscuits Cheese Flavored	1
Old Mother Hubbard All Natural Kibbled Biscuits	1
Old Mother Hubbard All Natural Au Bon Dog Food	1

Brands Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
PRO-PET, INC.	
Big Red Rabbit Food	1
Big Red Dog Food Nuggets	2
RALSTON PURINA CO.	
Purina Game Bird Breeder Layena	1
Purina Meat Builder	1
Purina Meat Builder Pellets	1
Purina Game Bird Flight Conditioner	2
Purina Guinea Pig Chow #5025 Pellets	1
Purina Pig Starter Chow	1
Purina Start & Grow Bits	1
Purina Rabbit Chow Performance Blend	4
Purina Pure-Pride #300 Horse Feed	3
Purina Layena 16	6
Purina Pigeon Chow Checkers Pellets	1
Purina Pure-Pride #200 for Horses	1
Purina Nutri Blend Gold	1
Purina Rabbit Chow Complete Blend	4
Purina Horse Chow #200 Pellet	1
Purina Horse Chow #200 Complete Horse Feed	2
Purina Pork Finisher Pellets	1
Purina Pork Finisher BN	2
Purina Game Bird Maintenance Chow Bits	1
Purina Winter Blend Mix	1
Purina Roughage Extender II Pellets	1
Purina Pure-Pride #100	1
Purina Horse Chow 100 Complete Horse Ration	3
Purina Horse Chow 100 Pellets	1
Purina Horse Hay Replacer Pellets	1
Purina Scratch Grains Mix	1
SUNFLOWER, INC.	
Feathered Friend	1
UNITED CO-OPERATIVE FARMERS, INC.	
UCF 40 Dairy Supplement	1
UCF Turkey Starter B	1
UCF 22% Test Dairy Pellets	1
UCF 22% Test HE-LS	1
UCF Best Friend Dog Food	1
UCF Broiler Finisher Pellets	1
UCF Complete Broiler Crumbles	6
UCF Turkey Grower Pellets	7
UCF 20 Test NE-LS	1
UCF 20 Profitmaker	1
UCF 20 Profitmaker Pellets	3
UCF Turkey Finisher Pellets	4

Brands Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
UNITED CO-OPERATIVE FARMERS, INC. (Cont'd)	
UCF Pig Starter Pellets	6
UCF Turkey Finisher	2
UCF Rabbit Pellets	11
UCF Profitmaker 16 Pellets	11
UCF Tizwhiz Horse Feed	5
UCF Hog Grower Mash	4
UCF A.M. Grower Pellets	3
UCF A.M. Grower Mash	6
UCF Hog Grower Pellets	11
UCF Complete Layer Mash	7
UCF Complete Layer Pellets	10
UCF Complete Layer Crumbles	7
UCF Fit 'N Show Pellets	1
UCF Pride Complete Horse Feed	6
UCF Wheat Bran	3
UCF Complete Layer Mash	1
UCF Hog Finisher Pellets	1
UCF Sow Gestation Pels	1
UCF Whole Oats	2
UCF Hay Extender	1
UCF Scratch Feed Mix	1
VENTURA GRAIN CO., INC.	
Every Day 20% High Energy Dairy Pellets	2
Every Day 20% Turkey Grower Bits	1
Every Day 20% Pigeon Feed Pellets	1
Every Day Rabbit Pellets	2
Every Day 16% Dairy Pellets	3
Every Day Complete Layer 16 Pellets	3
Every Day Complete Grower Bits	1
Every Day Formula 1400 Horse Pellets	1
Every Day Hog Feed Pellets	2
Every Day Horse Feed Pellets	1
Every Day Formula 1100 Horse Pellets	1
WARDLEY PRODUCTS CO., INC.	
Wardley's Basic Food Flakes	1
Wardley's Turtle Food Flakes	1
Wardley's Freeze Dried Tubifex Worms	1
Wardley's Brine Shrimps Pellets	1
Wardley's Goldfish Food Flakes	1
Wardley's Pelleted Pool Fish Food	1
WAYNE PET FOOD DIV: CONTINENTAL GRAIN CO.	
Wayne Dog Food	1
Wayne Dog Food Bite Size	1
Wayne Rodent Blox 8604-00	1

Brands Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
WAYNE PET FOOD DIV: CONTINENTAL GRAIN CO. (Cont'd)	
Wayne Por-Mix Dog Food	1
Wayne Tail Wagger Dog Food	1
H. K. WEBSTER CO., INC.	
Blue Seal Dari-Meal 40 Protein & Mineral Supplement	1
Blue Seal Natural 40 Dairy Pellets	2
Blue Seal Sheep Concentrate	2
Blue Seal Kat Krunchies	1
Blue Seal Natural "26" Dog Food	2
Blue Seal Peanut Hearts	1
Blue Seal Krunchies Dog Food	1
Blue Seal Broiler Crumbles C B	6
Blue Seal Guinea Pig Pellets/Vitamin C	5
Blue Seal Hi-Pro 20 Pels Rabbit Pellets	12
Blue Seal Turkey Grower Pellets	8
Blue Seal Energizer 20 Dairy Pellets	4
Blue Seal Avi Pels for Zoo Aviaries	1
Blue Seal Milk-Maker 20 Dairy Pellets	3
Premium Call Milk Replacer-Nurse Maid Milk Replacer	1
Blue Seal Hi-Test 20 Dairy Pellets	1
Blue Seal Game Bird Crumbles	1
Blue Seal Hutch 18 Pels Rabbit Pellets	12
Blue Seal Fat & Finish Pellets	4
Blue Seal Lamb Starter-Grower Pellets	8
Blue Seal Stampede Horse Feed	1
Blue Seal Breeder Pellets	5
Blue Seal Bunny 16 Pels Rabbit Pellets	5
Blue Seal Milk Maker 16 Dairy Pellets	8
Blue Seal Contender Horse Feed Pellets	7
Blue Seal Energizer 16 Dairy Pellets	3
Blue Seal Pig & Sow Pellets	17
Blue Seal Layer Pellets	11
Blue Seal Grower-Cal Pellets	4
Blue Seal Layer Mash	9
Blue Seal Lamb Finisher Pellets	5
Blue Seal Grower-Cal Mash	1
Blue Seal Trotter Complete Horse Ration Pellets	13
Blue Seal Coarse 14 Dairy Feed	1
Blue Seal Pork Maker Mash	5
Blue Seal Trotter	1
Blue Seal Stock Pellets	1
Blue Seal Mustang Horse Feed	1
Blue Seal Pacer Horse Feed	1
Blue Seal Strider Horse Feed Pellets	10
Blue Seal 11 Pork Maker Mash	1
Blue Seal Sing-along Mix	1

Brands Not Conforming to Guarantees

This table includes brands that are one percent or more under guarantee in protein or fat or are one and one-half percent or more over guarantee in fiber.

Manufacturer & Brand	PROTEIN Guaranteed	PROTEIN Found	FAT Guaranteed	FAT Found	FIBER Guaranteed	FIBER Found
BERNARDSTON GRAIN MILL, INC.						
Chicken Starter Grower	15.0	W.T.*	4.5	2.5	6	----
Excel Laying Mash	16.0	13.2	4.5	2.6	6	----
Excel Pig Grower	15.0	----	4.5	2.6	6	----
Chicken Starter & Grower	15.0	W.T.*	4.5	2.5	6	----
Pig Starter & Grower	16.0	W.T.*	4.5	3.1	6	----
Excel Laying Mash	16.0	W.T.*	4.5	2.7	6	----
Chicken Starter & Grower	18.0	----	4.5	2.5	6	----
Excel Laying Mash	17.0	14.1	4.5	2.1	6	----
MOYER & SON, INC.						
Five Star Conditioner Pigeon Feed	16.0	13.8	2.5	----	5	----
NUTRENA FEED DIV., CARGILL, INC.						
Fort Orange Horse Feed	14.0	12.9	2.5	----	10	----
RALSTON PURINA CO.						
Purina Rabbit Chow Complete Blend	14.0	----	2.0	----	20	23.3
Purina Layena 16	16.0	14.9	1.5	----	7	----
UNITED CO-OPERATIVE FARMERS, INC.						
UCF Pride Horse Feed	13.0	W.T.*	2.0	----	15	17.2
UCF Pig Starter Pellets	18.0	----	4.0	W.T.*	5	7.3
UCF Whole Oats	11.0	9.9	4.0	----	12	W.T.*
UCF 16 Profitmaker	16.0	----	3.5	----	8.5	10.5
H. K. WEBSTER CO., INC.						
Blue Seal Fat & Finish Pellets.	18.0	16.7	4.5	W.T.*	3.5	----
Blue Seal Bunny 16 Pels	16.0	14.8	2.5	----	18	----
Blue Seal Pork Maker Mash	13.0	----	3.5	2.2	7	----
Blue Seal Bunny 16 Pels	16.0	14.4	2.5	----	18	----

* Within Tolerance

Brands Containing Drugs

Manufacturer & Brand	Drug	Guaranteed % or g/T	Found % or g/T
AGWAY, INC.			
Agway Country Chicken Grower	Amprolium	.004%	.0043%
Agway Country Chicken Grower	Amprolium	.004	.0040
Agway Country Chick Starter	Amprolium	.004	.0042
Agway Country Chick Starter	Amprolium	.004	.0036 *
Agway Country Chicken Grower	Amprolium	.004	.0033 *
Agway Country Chicken Grower	Amprolium	.004	.0032 *
Agway Country Chicken Grower	Amprolium	.004	.0036 *
Agway Country Chicken Grower	Amprolium	.004	.0021 **
Agway Country Chick Starter	Amprolium	.004	.0033 *
Agway Country Chicken Grower	Amprolium	.004	.0043
Agway Country Chick Starter	Amprolium	.004	.0043
Agway Country Chicken Grower	Amprolium	.004	.0039
Agway Country Chick Starter	Amprolium	.004	.0034 *
Agway Country Chicken Grower	Amprolium	.004	.0031 **
Agway Country Chick Starter	Amprolium	.004	.0006 **
Agway Country Chick Starter	Amprolium	.004	.0036 *
Agway Country Chicken Grower	Amprolium	.004	.0041
Agway Country Chicken Grower	Amprolium	.004	.0043
Agway Country Chick Starter	Amprolium	.004	.0029 **
Agway Country Chicken Grower	Amprolium	.004	.0020 **
Agway Country Chicken Grower	Amprolium	.004	.0039
Agway Country Broiler Maker	Amprolium	.0125	.0103 *
Agway Country Broiler Maker	Amprolium	.0125	.0105 *
Agway Country Broiler Maker	Amprolium	.0125	.0120

Brands Containing Drugs (Cont'd)

Manufacturer & Brand	Drug	Guaranteed % or g/T	Found % or g/T
AGWAY, INC. (Cont'd)			
Agway Country Broiler Maker	Amprolium	.0125%	.0111% *
Agway Country Broiler Maker	Amprolium	.0125	.0103 *
Agway Country Broiler Maker	Amprolium	.0125	.0133
Agway Country Broiler Maker	Amprolium	.0125	.0104 *
Agway TCR #1 Total Calf Ration	Chlortetracycline	18 g/T	15 g/T
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	16
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	14 *
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	14 *
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	19
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	20
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	16
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	16
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	19
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	15
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	19
Agway TCR #1 Total Calf Ration	Chlortetracycline	18	20
Agway Hi-Energy Lamb Pellets	Chlortetracycline	50	54
Agway Hi-Energy Lamb Pellets	Chlortetracycline	50	50
Agway Hi-Energy Lamb Pellets	Chlortetracycline	50	44 *
Agway Hi-Energy Lamb Pellets	Chlortetracycline	50	47
Agway Hi-Energy Lamb Pellets	Chlortetracycline	50	52
Agway Red Label Milk Replacer	Chlortetracycline	150	180
Agway Red Label Milk Replacer	Chlortetracycline	150	158
Agway Blue Label Milk Replacer	Oxytetracycline	100	109

Brands Containing Drugs (Cont'd)

Manufacturer & Brand	Drug	Guaranteed % or g/T	Found % or g/T
AGWAY, INC. (Cont'd)			
Agway Blue Label Milk Replacer	Oxytetracycline	100 g/T	98 g/T
Agway Blue Label Milk Replacer	Oxytetracycline	100	98
Agway Blue Label Milk Replacer	Oxytetracycline	100	89 *
CARNATION COMPANY			
Family Farm Pullet Grower Developer	Amprolium	.0125%	.0133%
RALSTON PURINA CO.			
Purina Meat Builder NP	Amprolium	.0125	.0103 *
Purina Broiler Chow	Amprolium	.0125	.0105 *
Purina Chick Startena	Amprolium	.0125	.0114 *
Purina Hog Grower Chow	Oxytetracycline	50 g/T	44 g/T *
UNITED CO-OPERATIVE FARMERS, INC.			
UCF Starter	Amprolium	.008%	.0055% **
UCF Milk Replacer	Chlortetracycline	50 g/T	58 g/T
UCF AM Grower F.C.	Chlortetracycline	100	105
UCF Turkey Finisher	Oxytetracycline	150	151
UCF Turkey Grower	4-Nitrophenylarsonic Acid	.01875%	.01558% *
UCF Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01591 *
UCF Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01400 *
UCF Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01426 *
UCF Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01360 *
VENTURA GRAIN CO., INC.			
Every-Day Chick Starter	Amprolium	.0125	.0104 *
H. K. WEBSTER CO.			
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125	.0111 *
Blue Seal Chick Starter AM	Amprolium	.0125	.0145
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125	.0120
Blue Seal Chick Starter	Amprolium	.0125	.0088 **
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125	.0113 *
Blue Seal Chick Starter AM	Amprolium	.0125	.0110 *

Brands Containing Drugs (Cont'd)

Manufacturer & Brand	Drug	Guaranteed % or g/T	Found % or g/T
H. K. WEBSTER CO., INC. (Cont'd)			
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125%	.0093% **
Blue Seal Chick Starter AM	Amprolium	.0125	.0113 *
Blue Seal Chick Starter am	Amprolium	.0125	.0124
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125	.0110 *
Blue Seal Turkey/Game Bird Starter	Amprolium	.0125	.0108 *
Blue Seal Piglets	Oxytetracycline	50 g/T	47 g/T
Blue Seal Piglets	Oxytetracycline	50	57
Blue Seal Dairy Maid Milk Replacer	Oxytetracycline	50	48
Blue Seal Milky Way Milk Replacer	Oxytetracycline	50	51
Blue Seal Piglets	Oxytetracycline	50	52
Blue Seal Piglets	Oxytetracycline	50	46
Blue Seal Turkey Grower	4-Nitrophenylarsonic Acid	.01875%	.01564% *
Blue Seal Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01426 *
Blue Seal Turkey Grower	4-Nitrophenylarsonic Acid	.01875	.01386 *

* Within Tolerance

** Deficient

SEED LABORATORY REPORT NO. 59 FOR 1986

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SEED INSPECTION 1986

Report Number 59 by the Seed Laboratory

of the Feed, Seed, and Fertilizer Laboratory

West Experiment Station, Amherst, MA 01003

UNIVERSITY OF MASSACHUSETTS
COLLEGE OF FOOD & NATURAL RESOURCES
AGRICULTURAL EXPERIMENT STATION

E. Bruce MacDougall, Director

INTRODUCTION

This report, the fifty-ninth in seed control service, is a record of the work assigned to the Agricultural Experiment Station by the Seed Law. It was enacted to regulate the selling of seeds and is primarily a labeling law. The enforcement and regulations are administered by the Control Officer, Department of Food & Agriculture, at Boston, MA.

SEED LABORATORY STAFF

Carl H. Eiben, Associate Professor, Chief Seed Analyst
Betty A. Start, Statistical Typist
Brian J. Dugas, Departmental Assistant

The Seed Laboratory is maintained to test official and service samples, provide technical information, and determine if seed lots are labeled correctly. It provides services for seedsmen, home gardeners, farmers, dealers and other state agencies. Seed inspectors submitted 793 official samples and additional 148 were tested as service samples.

This laboratory is a member of the Association of Official Seed Analysts which establishes the rules for testing used in the United States and Canada. During the year this laboratory participated in 2 cooperative research projects.

STATE SEED INSPECTORS

James M. Cassidy, Chief, Control Officer
George M. Porter, Chief Market Investigator
Daniel J. Burns, Market Investigator
Charles A. Batts, Market Investigator
Earl H. Goodrich, Market Investigator

The seed inspectors operate from the Department of Food & Agriculture in Boston. They buy seed samples from retail and wholesale outlets throughout the state and these become the official samples. They also issued Stop Sale Orders on six lots of seed for lack of current germination date. All carry-over seed must be retested for germination every nine months.

TABLE I BREAKDOWN OF SAMPLES FOR THE YEAR

KIND OF SAMPLES	NO. REC'D	NUMBER OF ANALYSIS SCHEDULED		
		GERMINATION	PURITY	NOXIOUS WEED
OFFICIAL SAMPLES				
Agricultural Crops	46	43	28	4
Grass Mixtures	69	88	35	24
Vegetables & Herbs	560	552	--	--
Flowers	115	52	--	--
Sprout Samples	3	6	3	2
TOTAL OFFICIAL	793	741	66	30
SERVICE SAMPLES				
Agricultural Crops	41	40	--	--
Grass Mixtures	7	15	--	--
Vegetables	79	79	--	--
Flowers	3	3	--	--
Identification	2	--	2	--
Tobacco Cleaning	2	--	--	--
Research	14	14	--	--
TOTAL SERVICE	148	151	2	0
TOTAL ALL SERVICES	941	892	68	30

FEDERAL SEED LAW VIOLATIONS

Since most seed sold in the state is produced in other states, it becomes part of interstate commerce regulated by the Federal Seed Act. If our tests indicate a serious violation, the seed control officer forwards the information to the Federal Seed Laboratory. The state seed inspectors also pick up samples specifically for the Federal Field Trials.

The Charles C. Hart Seed Company was issued a warning as to a false labeling of a variety of spinach.

The ARCO Seed Company was fined for a false labeling as to germination percentage and to false labeling as to variety name of broccoli seed.

GENERAL REQUIREMENT OF THE STATE SEED LAW

Seeds which are to be sold in Massachusetts must meet all the requirements of the Seed Act. The latest publication, "Massachusetts Seed Law with Rules and Regulations Amended January 1984" may be obtained from the seed control officer.

The main provision of the law are listed below:

A. All Seeds
   1. Must be labeled to show the kind and usually the variety.
   2. The name and complete address of the labeler or seller.
   3. Treatment statement, if any, according to Federal Rules.
   4. Lot number or other identification.
   5. Must indicate the germination test is current (within 9 months prior to sale).

B. Agricultural and Mixtures
   1. Commonly accepted name of all kinds and variety with exceptions under section 12 of the Rules and Regulations.
   2. The name and number per pound of any Restricted Noxious Weeds present.
   3. Percentage of hard seed, if any, of each pure seed component.
   4. The calendar month and year of germination of each component.
   5. Show the percentage by weight of each pure seed component in order of predominance in a mixture in excess of 5 percent of the whole.
   6. Show the percentage by weight of other crop seed, and also if Undesirable Crop Seeds are present according to Section 10 of Rules and Regulations.
   7. Show the percentage by weight of weed seed, but not more than 1 percent.
   8. Show the percentage by weight inert matter, but not more than 15 percent.

C. Vegetable and Herb Seeds
   1. If seeds are in containers of more than one pound for peas, beans, and sweet corn or more than one quarter pound for other seeds, the label must show percentage germination, percentage hard seed, if any, and date of test.
   2. If seeds are packaged in smaller containers than above, the label must show the year for which packaged.
   3. Standards for each kind are listed in the Rules and Regulations.

D. Flower Seeds
   1. The seeds must be marked as to annual, biennial, or perennial.
   2. If seed are packaged in containers larger than those for home gardens, the label must show percentage germination, percentage hard seed, if any, and date of test.
   3. If seed are packaged in containers for home flower gardens, the label must show the year for which packaged.
   4. Standards for most kinds are listed in the Rules and Regulations.

E. Seeds in Preplanted Containers, Mats or Tapes
   1. The label must show the minimum number of seeds per square foot for agricultural seeds, and for other seed, the minimum number in the container.

F. Seeds for Sprouting
   1. Commonly accepted name of kind or kinds if a mixture.
   2. Percentage by weight of each pure seed component in excess of 5% of the whole and other crop seeds, inert matter, weed seeds, if occuring.
   3. Percentage of germination of each pure seed component.
   4. The calendar month and year the test was completed.

CLASSIFICATION OF VIOLATIONS IN OFFICIAL SAMPLES

The official seed samples represent a cross section from as many lots and sources as possible which present an unbiased survey of seed being offered for sale in Massachusetts. Most of the samples were found to be labeled correctly, but 5.8% were found to be mislabeled. Any findings which are different from the labeled information or in variance with the Seed Law were reported to the wholesaler, retailer and Seed Control Official.

The details of the specific points of violation are given in four tables which follow this section under four general kinds of seeds tested--Agricultural, Mixtures, Vegetables, Flowers. In these tables, notations are made as to whether the violations are serious, minor, or technical. This classification is based on the following:

SERIOUS (S) is assigned when laboratory findings are:

1. below the label by more than twice the official tolerance (Rules of AOSA) for the percent by weight of any pure seed component or its germination, or more than label for weeds or Restricted Noxious Weed.
2. grossly mislabeled as to content or use.
3. under 95% claim for seed count or seed weight.
4. less than two-thirds germination standard (unfit for seeding).
5. over one percent weeds.
6. Prohibited Noxious Weed present.
7. treated when not labeled as treated or vice versa.

MINOR (M) is assigned when laboratory findings are:

1. below the label by more than official tolerance for percentage by weight of any pure seed component or its germination.
2. more than the label for pure seed component, weed seed or Restricted Noxious Weed.
3. more than double the official tolerance for inert matter and crop seeds.
4. mislabeled as to use or description.
5. below stated or standard of germination.
6. date of germination is older than 9 months.

TECHNICAL (T) is assigned when laboratory findings show the quality of seed is within tolerance of the label, but not as to:

1. name or kind improperly used, or missing.
2. germination percentage missing.
3. date of test or year packaged missing or illegible.
4. arithmetic mistake in purity total.
5. not stated as pelleted.

TABLE II SAMPLES OF AGRICULTURAL SEED REPORTED AS MISLABELED

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
LOFTS, INC. ARLINGTON, MA Lofts, Inc. Arlington, MA	(1) Ryegrass, Repell Perennial M59-5-RRD #86-2584B	Total purity % less than 100	INACCURATE T
	(2) Tall Fescue, Clemfine L16-5-12 #86-2588	Total purity % less than 100	INACCURATE T
	(3) Kentucky Blue- grass, Ram I 50.3046 #86-2597	Germination % below stated L 80 -- F 67	DEFICIENT M

TABLE III SAMPLES OF GRASS MIXTURES REPORTED AS MISLABELED

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
ATTLEBORO FARM & GARDEN N. ATTLEBORO, MA Attleboro Farm & Garden N. Attleboro, MA	(1) Pride AP 185 #86-183	The word "Mixture" must appear on label	REQUIRED T
	(2) Quick Catch 31258 #86-184	Mislabeled as to purity % S Red Fescue L 33.95 -- F 80.61 Ryegrass L 54.15 -- F 14.80 Kentucky Bluegrass L 8.50 -- F 0.70 Other Crop L 0.10 -- F 2.03 GROSSLY MISREPRESENTED S The word "Mixture" must appear on label	REQUIRED T

TABLE III SAMPLES OF GRASS MIXTURES REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
ATTLEBORO FARM & GARDEN (Cont'd) N. ATTLEBORO, MA Attleboro Farm & Garden N. Attleboro, MA	(3) Triplex Shade ------ #86-185	Mislabeled as to purity % Kentucky Bluegrass L 49.00 F 0.85 Chewings Fescue L 29.40 F 80.24 Other Crop L 0.15 -- F 2.50 GROSSLY MISREPRESENTED The word "Mixture" must appear on label Lot # is missing	S -- -- -- S REQUIRED T REQUIRED T
CHANNEL HOME CENTERS WHIPPANY, NJ Channel Home Centers Brockton, MA	Elegant Lawn CELN186 #86-2196	Annual Bluegrass is a Noxious Weed	REQUIRED T
CONLON & DONNELLY CO. ATTLEBORO, MA Conlon & Donnelly Co. Attleboro, MA	(1) Custom 30575-161 #86-174	Label should be upright on box	INAPPROPRIATE T
	(2) Rhode Island #2 32405-161 #86-175	Label should be upright on box	INAPPROPRIATE T
GARFIELD-WILLIAMSON, INC. JERSEY CITY, NJ Channel Home Centers Framingham, MA	Playgreen PGP 186 #86-2113	Annual Bluegrass is a Noxious Weed	REQUIRED T
NORTHRUP-KING CO. MINNEAPOLIS, MN Fairbanks Hdwe. Bridgewater, MA	Servess 48878-6360A #86-48	Components should be listed in order of predominance	REQUIRED T
NORTHRUP-KING CO. MINNEAPOLIS, MN My Three Sons Hdwe. Rockland, MA	Fix-up 48866-6330AB #86-2197	Components should be listed in order of predominance	REQUIRED T

TABLE III SAMPLES OF GRASS MIXTURES REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
SEABOARD SEED CO. BRISTOL, IL Somerset Paint- Wallpaper Hdwe. Somerset, MA	Servistar Shady 114125.60 #86-179	65% sunny varities	MISREPRESENTED T
STANFORD SEED CO. BUFFALO, NY Conlon & Donnelly Co. Attleboro, MA	Old English Rapid 20625-00151 #86-177	Label should be upright on box	INAPPROPRIATE T
TURF RESEARCH, INC. GRANT PARK, IL #7155 K-Mart Fairhaven, MA	Super K-Gro Spot Seeder B6223 #86-224	Components should be listed in order of predominance	REQUIRED T
VAUGHAN'S SEED CO. BOUND BROOK, NJ Lexington Gardens Lexington, MA	Masterblend 7665 #86-2140	Mislabeled as to purity % Red Fescue L 24.50 -- F 34.53 Kentucky Bluegrass L 73.50 -- F 59.44 Other Crop L 0.50 -- F 4.79	S MISREPRESENTED T

TABLE IV SAMPLES OF VEGETABLES & HERB SEEDS REPORTED AS MISLABELED

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
COMSTOCK FERRE & CO. WETHERSFIELD, CT Spag's Supply, Inc. Shrewsbury, MA	(1) Beans, Bush Blue Lake ------ #86-138	Lot # and year packaged for	REQUIRED T

TABLE IV SAMPLES OF VEGETABLES & HERB SEEDS REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
COMSTOCK FERRE & CO. (Cont'd) WETHERSFIELD, CT Spag's Supply, Inc. Shrewsbury, MA	(2) Beans, Kentucky Wonder ------ #86-140	Lot # and year packaged for REQUIRED	T
	(3) Beans, Stringless Greenpod ------ #86-142	Lot # and year packaged for REQUIRED	T
	(4) Beans, Bush Tendergreen ------ #86-143	Lot # and year packaged for REQUIRED	T
	(5) Peas, Sparkle ------ #86-144	Lot # and year packaged for REQUIRED	T
	(6) Peas, Tall Telephone ------ #86-145	Lot # and year packaged for REQUIRED	T
HARRIS MORAN SEED CO. ROCHESTER, NY James M. Cassidy Boston, MA	Chicory, Witloof 386-51177 #86-2555	Germination Standard 65% -- UNFIT FOR SEEDING	F 20 S
CHAS. C. HART SEED CO. WETHERSFIELD, CT Poole's Hdwe. Brockton, MA	(1) Kale, Dwarf Green Curled 1 #86-2004	Germination Standard 75% -- DEFICIENT	F 61 M

TABLE IV SAMPLES OF VEGETABLES & HERB SEEDS REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
CHAS. C. HART SEED CO. (Cont'd) WETHERSFIELD, CT Poole's Hdwe. Brockton, MA	(2) Lettuce, Salad Bowl	Germination Standard 80% -- F UNFIT FOR SEEDING	6 S
HELIX CORPORATION BOULDER, CO Wareham Feed Co. Wareham, MA	(1) Dill ------ #86-25	Lot # and year packaged for	REQUIRED T
	(2) Parsley ------ 58 #86-26	Variety name missing and must be stated	REQUIRED M
PARK SEED CO. GREENWOOD, SC James M. Cassidy Boston, MA	(1) Corn, Butter & Sugar 5105 #86-2568	Year packaged for is	REQUIRED T
	(2) Beans, Bush Slenderette 5551 #86-2569	Year packaged for is	REQUIRED T
	(3) Beans, Kentucky Wonder 5029 #86-2570	Year packaged for is	REQUIRED T
	(4) Peas, Maestro 5239 #86-2571	Year packaged for is	REQUIRED T
	(5) Cucumber, Poinsett 76 5589 #86-2572	Year packaged for is	REQUIRED T

TABLE IV SAMPLES OF VEGETABLES & HERB SEEDS REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
PARK SEED CO. (Cont'd) GREENWOOD, SC James M. Cassidy Boston, MA	(6) Beet, Early Wonder 5050 #86-2573	Year packaged for is	REQUIRED T
	(7) Carrot, Lady Finger 5120 #86-2574	Year packaged for is	REQUIRED T
	(8) Lettuce, Crispy Sweet 5143 #86-2575	Year packaged for is	REQUIRED T
	(9) Celery, Giant Pascal 5086 #86-2576	Year packaged for is	REQUIRED T
	(10) Radish, Inca 5271 #86-2577	Year packaged for is	REQUIRED T
	(11) Lettuce, Salad Bowl 5160 #86-2578	Year packaged for is	REQUIRED T
J. B. RICE, JR. SHUSHAN, NY Old Colony Landscape Weymouth, MA	Parsley, Hamburg/Rooted ------ #86-2058	Germination Standard 60% -- Lot # is	F 42 DEFICIENT M REQUIRED T
THOMPSON & MORGAN JACKSON, NJ Lexington Gardens Lexington, MA	Carrot, Juwarot 340 #86-2119	Year packaged for is	REQUIRED T

TABLE IV SAMPLES OF VEGETABLES & HERB SEEDS REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
TSANG & MA INTERNATIONAL BELMONT, CA Lexington Gardens Lexington, MA	Onion, Bunching 329 #86-2135	Germination Standard 70% -- DEFICIENT	F 47 M
VAUGHAN'S SEED CO. DOWNERS GROVE, IL Caldor, Inc. Norwell, MA	Lettuce, White Boston 1 #86-2092	Germination Standard 80% -- DEFICIENT	F 63 M

TABLE V SAMPLE OF FLOWER REPORTED AS MISLABELED

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
PARK SEED CO. GREENWOOD, SC James M. Cassidy Boston, MA	Sweet Alyssum, Wonderland Rose 0052 #86-2579	Year packaged for is	REQUIRED T

TABLE VI SPROUT SAMPLES REPORTED AS MISLABELED

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
APPLEWOOD SEED CO. GOLDEN, CO Lexington, MA	(1) Alfalfa, Not Stated 502 #86-2115	Month of test is	REQUIRED T

TABLE VI SPROUT SAMPLES REPORTED AS MISLABELED (Cont'd)

LABELER/SHIPPER Seller/Consignee	KIND, VARIETY Lot # Lab #	VIOLATIONS Labeled L Found F	SERIOUS S MINOR M TECHNICAL T
APPLEWOOD SEED CO. (Cont'd) GOLDEN, CO Lexington, MA	(2) Spicy Mix 503 #86-2116	Month of test is	REQUIRED T
	(3) Munchy Mix 603 #86-2117	Month of test is	REQUIRED T

TABLE VII COMPLIANCE OF SEED DEALERS TO SEED LAW

LABELER/SHIPPER	KIND	TESTED	COMPLIED	NOT COMPLIED	VIOLATIONS S	M	T
AGWAY, INC. Syracuse, NY	Agri.	1	1	0			
	Mix.	3	3	0			
	Veg.	62	62	0			
	Fl.	28	28	0			
APPLEWOOD SEED CO. Golden, CO	Sprout	3	0	3	-	-	3
ATTLEBORO FARM & GARDEN N. Attleboro, MA	Mix.	3	0	3	2	-	4
BENTLEY SEED CO. Cambridge, NY	Veg.	35	35	0			
	Fl.	5	5	0			
BURPEE SEEDS Warminster, PA	Veg.	32	32	0			
	Fl.	4	4	0			
CHANNEL HOME CENTER Whippany, NJ	Mix.	1	0	1	-	-	1

TABLE VII COMPLIANCE OF SEED DEALERS TO SEED LAW (Cont'd)

LABELER/SHIPPER	KIND	TESTED	COMPLIED	NOT COMPLIED	VIOLATIONS S	M	T
COMSTOCK FERRE & CO.	Veg.	53	47	6	-	-	12
Wethersfield, CT	Fl.	2	2	0			
CONLON & DONNELLY	Mix.	2	0	2	-	-	2
Attleboro, MA							
CRAWFORD GARDEN SUPPLY	Mix.	3	3	0			
Providence, RI							
CROSMAN SEED CORP.	Veg.	31	31	0			
E. Rochester, NY	Fl.	3	3	0			
EXCEL SEED CO.	Veg.	14	14	0			
Downers Grove, IL	Fl.	1	1	0			
FREDONIA SEED CO.	Veg.	32	32	0			
Fredonia, NY							
GARFIELD-WILLIAMSON	Mix.	5	4	1	-	-	1
Jersey City, NJ							
GREENVIEW	Mix.	2	2	0			
Lebanon, PA							
HARRIS MORAN SEED CO.	Veg.	21	20	1	1	-	-
Rochester, NY							
CHAS. C. HART SEED CO.	Agri.	1	1	0			
Wethersfield, CT	Mix.	3	3	0			
	Veg.	35	33	2	1	1	-
	Fl.	2	2	0			
HELIX CORPORATION	Veg.	3	1	2	-	1	1
Boulder, CO	Fl.	1	1	0			

TABLE VII COMPLIANCE OF SEED DEALERS TO SEED LAW (Cont'd)

LABELER/SHIPPER	KIND	TESTED	COMPLIED	NOT COMPLIED	VIOLATIONS S	M	T
INTERNATIONAL SEED Halsey, OR	Agri.	4	4	0			
JOHNNY'S SEED Albion, ME	Agri. Veg.	1 24	1 24	0 0			
MICHAEL LEONARD Grant Park, IL	Veg. Fl.	16 2	16 2	0 0			
LOFTS, INC. Bound Brook, NJ	Agri. Mix.	21 8	18 8	3 0	-	1	2
JOHN D. LYON, INC. Cambridge, MA	Mix.	3	3	0			
NORMARC, INC. Tangent, OR	Agri.	1	1	0			
NORTHRUP-KING SEEDS Minneapolis, MN	Mix. Veg. Fl.	5 36 9	3 36 9	2 0 0	-	-	2
PAGE SEED CO. Greene, NY	Veg. Fl.	44 32	44 32	0 0			
GEORGE W. PARK Greenwood, SC	Veg. Fl.	11 1	0 0	11 1	- -	- -	11 1
J. B. RICE, JR. Shushan, NY	Veg. Fl.	28 11	27 11	1 0	-	1	-
J. M. SCHULTZ SEED Dieterich, IL	Agri.	1	1	0			

TABLE VII COMPLIANCE OF SEED DEALERS TO SEED LAW (Cont'd)

LABELER/SHIPPER	KIND	TESTED	COMPLIED	NOT COMPLIED	VIOLATIONS S	M	T
O. M. SCOTT & SONS Marysville, OH	Mix.	6	6	0			
SEABOARD SEED CO. Bristol, IL	Agri.	1	1	0			
	Mix.	1	0	1	-	-	1
SEARS, ROEBUCK & CO. Chicago, IL	Agri.	1	1	0			
	Mix.	4	4	0			
STANFORD SEED CO. Buffalo, NY	Agri.	12	12	0			
	Mix.	11	10	1	-	-	1
STOKES SEED CO. Buffalo, NY	Veg.	23	23	0			
THOMPSON & MORGAN Farmingdale, NJ	Veg.	17	16	1	-	-	1
	Fl.	2	2	0			
TRUE VALUE HDWE. Chicago, IL	Veg.	5	5	0			
	Fl.	3	3	0			
TSANG & MA INTERNATIONAL Belmont, CA	Veg.	9	8	1	-	1	-
TURF RESEARCH, INC. Grant Park, IL	Mix.	6	5	1	-	-	1
VAUGHAN'S SEED CO. Bound Brook, NJ	Agri.	2	2	0			
	Mix.	3	2	1	1	-	-
VAUGHAN'S SEED CO. Downers Grove, IL	Veg.	29	28	1	-	1	-
	Fl.	9	9	0			
TOTALS		793	747	40	5	0	44

TABLE VIII ANALYSIS OF SEED LAW VIOLATIONS

CLASS OF SAMPLES	NUMBER COLLECTED	NUMBER OF VIOLATIONS	% VIOLATIONS
AGRICULTURAL CROP	46	3	6.5
GRASS MIXTURES	69	13	19.0
VEGETABLE & HERBS	560	26	4.6
FLOWERS	115	1	.9
SPROUTS	3	3	100

SUMMARY

Inspectors collected 793 official samples from retail and wholesale businesses to be analyzed by the seed laboratory. Forty-six samples were in violation. Purity tests were made for agricultural crops, grass and lawn mixtures and sprout samples. Germination tests were also made on the aforementioned samples as well as the numerous vegetable, herb and flower samples.

The serious violations that were found included the purity tests of three mixtures, twice beyond tolerance according to the label, and the germination percentage of two vegetables that were so low that it was "unfit for seeding."

Minor violations were assessed one agricultural crop and four vegetables, because they germinated slightly below a standard germination or a standard for that particular kind.

The labels were inspected closely for technical inaccuracies and omissions. Some of the technical violations found in this year's samples were the word "mixture" absent from the label, annual bluegrass not designated as a noxious weed, components of the mixture not listed in order of predominance, incorrect designation as a shady mixture, label misplaced on mixture box, total percentage less than 100, year packaged for missing on vegetables and flowers, lot number missing variety not stated, and month of test missing on sprout samples.

CONCLUSIONS

The Seed Laboratory in its work of examining and testing seeds and providing information to the public concerning the truth of labels on seed containers is helping, to meet the goal of the Seed Law.

Its aim is to protect the consumer by discouraging the sale of poor quality or falsely labeled seed, and to improve the quality of seed being sold.

APPENDIX I

UNIVERSITY OF MASSACHUSETTS SEED LABORATORY
SCHEDULE OF FEES FOR SEED TESTING

	PURITY ONLY	GERMINATION ONLY	PURITY & GERMINATION	NOXIOUS WEED EXAMINATION
FIELD CROPS				
Alfalfa	$ 1.50	$ .75	$ 1.75	$ 1.00
Alsike	1.50	.75	1.75	1.00
Barley	1.00	1.00	1.50	.50
Bentgrass	2.00	1.50	3.00	1.00
Bluegrass	2.00	1.50	3.00	1.00
Bromegrass	1.50	1.00	2.00	1.00
Buckwheat	1.00	.75	1.25	.50
Clovers	1.50	.75	1.75	1.00
Corn	1.50	1.00	1.25	.50
Fescues	1.50	1.00	2.00	1.00
Oats	1.00	1.00	1.50	.50
Orchardgrass	1.50	1.00	2.00	1.00
Redtop	2.00	1.00	2.50	1.00
Rye	1.00	1.00	1.50	.50
Ryegrass	1.50	1.00	2.00	1.00
Sorghum	1.00	.75	1.25	.50
Soybean	1.00	.75	1.75	.50
Sudangrass	1.50	.75	1.75	.50
Timothy	1.50	1.00	2.00	1.00
Tobacco	1.50	1.00	2.00	1.00
Wheat	1.00	1.00	1.50	.50
FIELD OR LAWN MIXTURES				
Two components	3.00	2.00	4.50	1.00
Each additional	1.00	1.00	1.50	----
FLOWERS	1.50	1.00	2.00	.50
TREES & SHRUBS	1.50	1.50	2.50	.50
VEGETABLE & HERBS	1.50	.75	1.75	.50

CLEANING TOBACCO SEED: $1.00 per pound or fraction of a pound based on original weight.

KINDS OF SEED NOT LISTED: Fees are based on charges for similar sized seeds.

EXTRA DIRTY SAMPLES AND OTHER SERVICE REQUESTS: Fees are based on time consumed in making tests.

APPENDIX II

LABORATORY REGULATIONS

Any person residing or doing business in the Commonwealth of Massachusetts may submit seeds for purity, germination, and noxious weed examination. During the calendar year, the seed laboratory will allow two free germination tests of vegetable, flower, or tobacco seed.

The minimum of weights of samples to be submitted for purity analysis and noxious weed examination are:

A. Two ounces of alsike, bentgrass, bluegrass, redtop, timothy, and white clover.

B. Five ounces of alfalfa, bromegrass, fescues, orchardgrass, red clover, ryegrass and sudangrass.

C. Eight ounces of all mixtures including grass, lawn, pasture, or sprouting.

D. One pound of barley, buckwheat, corn, oats, rye, sorghum, soybean, and wheat.

The minimum number of seeds of any kind submitted for a germination test is 400. This includes the above mentioned seeds and vegetables, herbs, flowers, trees, and shrubs.

Samples should be taken so as to represent correctly the lot sampled and placed in a strong container and addressed to:

SEED LABORATORY
WEST EXPERIMENT STATION
UNIVERSITY OF MASSACHUSETTS
AMHERST, MA 01003

Checks or money orders for the fees, minus free tests, must be made payable to the Seed Law #280265-0190. The final laboratory report will be sent upon receipt of payment.

An official germination test is valid for nine months after the month the test is completed. Thus the report of a germination test made in October is good until August 1 of the following year. Sample for tests representing seed to be planted in the spring should be submitted after September 1, but before February 1. After that date and until July, the laboratory must give top priority to a heavy load of official samples.

INSPECTION OF COMMERCIAL FERTILIZERS AND AGRICULTURAL LIME PRODUCTS

Report Number 112 for the Fiscal Year

Ending 1986

By the Fertilizer Laboratory Staff

of the Feed, Seed, and Fertilizer Laboratory

West Experiment Station, Amherst, MA 01003

UNIVERSITY OF MASSACHUSETTS
COLLEGE OF FOOD & NATURAL RESOURCES
AGRICULTURAL EXPERIMENT STATION

Director, E. Bruce MacDougall

FEED & FERTILIZER STAFF:

Edward F. Vlach, Official Chemist in Charge
Paul Korpita, Senior Chemist
David Houle, Assistant Chemist
John Melnick, Technical Assistant
Betty A. Start, Statistical Typist

Mixtures Substantially Complying with Guarantees

Manufacturer & Brand	Number Samples Analyzed
AGRITURF, INC.	
Agriturf Fertilizer 5-10-5	1
Derby's All Purpose Fertilizer 5-10-5	1
Agriturf Fertilizer 5-10-10	2
Derby's All Purpose Fertilizer 5-10-10	1
Derby's Lawn Fertilizer 10-6-4	1
Agriturf Fertilizer 10-6-4	3
Agriturf Fertilizer 10-10-10	3
Agriturf Fertilizer 12.8-10-22	1
Agriturf Fertilizer 15-8-12	1
Agriturf Fertilizer 15-15-15	1
Agriturf Fertilizer 19-19-19	1
Agriturf Fertilizer 0-20-20	1
Agriturf Fertilizer 20-8-8	1
AGWAY, INC.	
Agway Blend-Rite 3-15-30	1
Agway Garden Plant Food 5-10-5	9
Agway Blend-Rite 5-10-10	6
Agway Nutri-Bond Ammoniated 5-10-10	3
Agway Blend-Rite 6-24-24	3
Agway Evergreen Plant Food 8-4-4	5
Agway Super Garden Plant Food 8-16-16	5
Agway Super Garden Plant Food & Lawn Starter 8-16-16	1
Agway "Blue Chip" Turf Food 10-5-5	1
Agway Nutri-Bond Ammoniated 10-10-10	3
Agway Blend-Rite 10-10-10	8
Agway Nutri-Bond 10-10-10	2
Agway Turfood Fertilizer 10-6-4	3
Agway Turfood Fertilizer Regular 10-6-4	3
Agway Turfood Special w/Broadleaf Weed Killer 10-6-4	1
Agway Turfood Professional Fertilizer 10-6-4	5
Agway Turfood Special Fertilizer 10-6-4	5
Agway Nutri-Bond Ammoniated 10-20-10	3
Agway Nutri-Bond Corn Starter 10-20-10	2
Agway Blend-Rite 10-20-20	5
Agway Nutri-Bond Ammoniated 10-20-20	2
Agway Blend-Rite 11-52-0	1
Agway Cran-Best 12-24-12	1
Agway Blend-Rite Fertilizer 15-8-12	3
Agway Nutri-Bond Ammoniated 15-8-12	2
Agway Nutri-Bond Ammoniated 15-15-15	2
Agway Blend-Rite 15-15-15	5
Agway Blend-Rite 19-19-19	1
Agway Start-N-Grow 100% Water Soluble 16-32-16	1
Agway Blend-Rite 0-10-40	3
Agway Alfa B 0-10-40	1
Agway Professional Fairway & Athletic Turf 20-5-10	2
Agway Professional No-Phos Green & Tee 20-0-10	1

Mixtures Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
AGWAY, INC. (Cont'd)	
Agway Sol-U-Green Water Soluble Plant Food 20-20-20	1
Agway Professional Green & Tee Turf 25-5-10	2
Agway Greenlawn Fertilizer & Weed Killer 21-5-7	6
Agway Greenlawn Fertilizer & Insect Killer 21-5-7	2
Agway Greenlawn Fertilizer 22-6-8	8
Agway Blend-Rite 23-12-8	1
CADWELL & JONES, INC.	
Surge Plant Food for Vegetables & Flowers 5-10-10	1
Surge Lawn & Garden Fertilizer 5-10-5	1
CHEVRON CHEMICAL COMPANY	
Ortho Rose Food 8-12-4	1
Ortho Evergreen Tree & Shrub Food 14-7-7	1
Ortho General Purpose Plant Food 10-10-10	1
Ortho Vegetable Food 8-10-8	2
Ortho Liquid African Violet Food 6-9-5	1
Ortho Azalea, Camelia & Rhododendron Food 10-7-7	1
CROP PRODUCTION SERVICES, INC.	
Agrico Fertilizer 5-10-10	4
Agrico Fertilizer 5-10-5	3
Agrico Fertilizer 5-20-20	1
Agrico Fertilizer W/A.S. 10-20-20	1
C.P.S. Fertilizer 10-20-20	1
Agrico Fertilizer 10-20-10	1
Agrico Fertilizer 6-24-12	1
Agrico Fertilizer 10-20-20	1
Agrico Fertilizer 18-46-0	1
Agrico Fertilizer 24-12-18	1
C.P.S. Fertilizer 19-19-19	1
Agrico Fertilizer W/A.S. 11-0-37	1
Agrico Fertilizer 15-8-12	2
THE ESPOMA COMPANY	
Espoma Holly-tone 4-6-4	2
Espoma Plant-tone 4-3-2	1
Espoma Garden-tone 4-6-6	1
ESTECH, INC.	
Gro-Tone Turf & Tree Food 12-4-8	1
Suburban Brand Fertilizer 10-10-10	2
Grow-Tone Plant Food 50% Organic 5-10-5	2
Grow-Tone Evergreen Food 6-3-6	1
Perk-Up 5-10-5	1
THE FER-MEL CORPORATION	
Fer-Mel Lawn Food 25-5-10	1

Mixtures Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
W. R. GRACE COMPANY	
Peters Professional Soluble Plant Food 30-10-10	1
Peters Professional Houseplant Food 15-30-15	1
Peters Professional Soluble Blossom Booster 10-30-20	1
HOWARD JOHNSON ENTERPRISES, INC.	
Surity Turf Food 26-3-3	1
THE HY-TROUS COMPANY	
Hy-Trous African Violet Liquid Fertilizer 4-12-4	1
Hy-Trous Liquid Plant Food 5-10-5	1
LEBANON CHEMICAL COMPANY	
Turf Master Vegetable Garden Food 5-10-5	1
Lebanon Vegetable Garden Food 5-10-10	3
Lebanon General Purpose Fertilizer 5-10-5	2
Lebanon Vegetable Garden Food 5-10-5	1
Country Squire 5-10-5	1
Lebanon Lawn & Garden Food 5-10-5	1
Lebanon ACRE 9-5-3	2
Greenview Green Start Seed Starter 9-17-9	2
Green Gold Re-Nu Lawn Food 8-18-10	2
Lebanon Agrinite 7-2-0	1
Greenview Spring Treble Crab Preventer 9-17-9	1
Green Gold Re-Nu Lawn Food 10-18-10	2
Lebanon Greenskeeper 50% Organic 10-6-4	1
Lebanon Grass Food-Pelleted 10-6-4	1
Greenskeeper Granular 50% Organic 10-6-4	1
Lebanon Grass Food 10-6-4	2
Greenview Winter Green 10-16-20	3
Lebanon Multi-Purpose 10-10-10	1
Lebanon Extra 10-10-10	2
Turf Master Lawn Food & Crabgrass Control 19-4-4	1
Lebanon Country Club w/Optanol 19-4-6	1
Turf Master Lawn Food & Insect Control 19-4-4	1
Greenview Crabicide Green 19-4-4	3
Greenview Gold Lawn Food & Grub Control 19-4-4	1
Green Gold Spring Crabgrass Control 19-4-4	2
Lebanon Professional Tree Food 16-4-8	1
Lebanon Country Club Fertilizer 19-4-6	1
Greenview Treble Crab Preventer 16-8-4	1
Lebanon Country Club Fertilizer 13-25-12	1
Lebanon Country Club Fertilizer 12-4-6	2
Lebanon Country Club w/Insect Control 19-4-6	1
Lebanon Country Club 90% N Organic 18-4-10	1
Greenskeeper Granular 20-4-10	1
Lebanon Greenskeeper Granular 20-6-3	3
Green Gold Feed & Weed 25-3-5	1

Mixtures Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
LEBANON CHEMICAL COMPANY (Cont'd)	
Turf Master Feed & Weed 26-3-3	1
Green Gold Lawn Food 26-4-6	4
Turf Master Lawn Food 27-3-3	2
Lebanon Country Club 25% N Organic 29-3-5	1
Greenview Green Power 30-4-4	5
Lebanon Professional Turf Products 32-4-8	1
Greenview 2 Way Green Power 30-4-4	7
LOFTS, INC.	
Lofts Lawn Food 28-3-8	2
Lofts Lawn Fertilizer 10-6-4	1
Lofts Fall Feed & Seed Starter 13-11-15	3
Lofts Weed & Feed 20-3-3	2
Lofts Starter Fertilizer 18-24-6	1
Lofts All Purpose Plant Food 5-10-5	1
MASSACHUSETTS NURSERYMEN'S ASSN.	
M.N.A. Turf - O - Ganic 10-6-4	1
M.N.A. Crab-Kleen 11-22-10	1
M.N.A. Plant - O - Ganic 8-8-8	1
M.N.A. Crab-Kleen 19-4-4	1
M.N.A. Turf-Kleen 25-3-5	2
M.N.A. Professional Lawn Food 26-4-6	2
MITCH'S NURSERY & GARDEN CENTER	
Mitch's Professional Lawn & Crab Control & Benefin 25-7-11	1
OLD FOX CHEMICAL COMPANY	
Old Fox Fertilizer 5-10-5	1
Old Fox Super Vegetable Pride 10-10-10	1
Old Fox Fertilizer 7-0-32	1
Old Fox Fertilizer 10-20-10	1
Old Fox Fertilizer 15-15-15	2
Old Fox Liquid 3-10-20	1
Old Fox Fertilizer 5-10-10-1.2	1
PARKER FERTILIZER COMPANY	
Parker's Fertilizer 10-6-4	1
Servistar Premium Weed & Feed 25-5-5	2
Servistar Lawn Pest Control & Fertilizer 25-3-3	1
Servistar Crabgrass Preventer w/Lawn Food 20-5-5	1
Servistar Premium Lawn Food 26-6-6	2
RAPID-GRO CORPORATION	
Rapid-Gro Plant Food 23-19-17	1

Mixtures Substantially Complying with Guarantees (Cont'd)

Manufacturer & Brand	Number Samples Analyzed
P. L. RAHRER & BROS, INC.	
Rahrers' Gro-Pel 15-15-15	1
Rahrers' Gro-Pel 10-20-20	1
O. M. SCOTT & SONS	
Scotts Lawn-Pro Crab Preventer Step 1 30-3-10	2
Scotts Lawn-Pro Weed Control Step 2 32-3-4	2
Scotts Lawn-Pro Insect Control Step 3 28-6-4	3
Scotts Lawn-Pro Lawn Fertilizer Step 4 31-3-10	2
Burpee Grow Vegetables 17-23-6	1
Scotts Starter Fertilizer w/Crabgrass Preventer 16-21-3	1
Scotts Winterizer Lawn Fertilizer 19-3-12	2
Scotts Starter Fertilizer 17-23-6	5
Scotts Weed & Feed 32-4-4	3
Scotts Halts 27-3-3	1
Scotts Lawn Insect Control & Fertilizer 28-6-4	1
Scotts Turf Builder Lawn Fertilizer 28-3-3	4
Burpee Grow Shrubs, Trees, Evergreens 20-3-8	1
Scotts Lawn-Pro Lawn Fertilizer 37-3-3	1
Scotts Plus 2 Turf Builder 27-3-3	6
Scotts Lawn Fertilizer 37-3-3	4
SEACOAST LABORATORIES, INC.	
Twin Light Lawn Food & Dursban 28-4-8	1
STANFORD SEED COMPANY	
Old English Crabgrass Killer & Fertilizer 18-3-5	1
Old English Lawn Fertilizer 28-4-8	3
Old English Weed Control w/Fertilizer 18-3-5	1
Old English Crabgrass Preventer w/Fertilizer 18-3-5	1
Old English Crabgrass Preventer w/Fertilizer 8-20-10	1
Old English Start-Tillizer Fall-Tillizer 8-20-10	4
SWIFT AGRICULTURAL CHEMICAL CORP.	
Vigoro Water Soluble Plant Food 20-10-5	1
UNIVERSAL CHEMICAL COMPANY, INC.	
Electra Plant Food Highly Organic 5-10-3	2
VALAGRA, INC.	
Valagra Fertilizer 5-10-10	1
Valagra Fertilizer 10-10-10	1
Valagra Fertilizer 11-52-0	1

Mixtures Showing Deficiencies Exceeding Tolerances

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
U.S.S. AGRICHEMICALS DIV. of U.S. STEELE				
U.S.S. Vertagreen 10-20-20		10.1	18.88 **	18.8 **
U.S.S. Vertagreen 14-14-14		11.5 **	14.8	15.5
AGRITURF, INC.				
Agriturf Pepper Starter 6-4-15 ...		13.8 ***	8.82 **	10.5 **
Agriturf Fertilizer 10-10-10		14.4 ***	9.49 *	9.9
Agriturf Fertilizer 6-24-12		8.5	22.83 **	11.4 *
Agriturf Fertilizer 24-12-18		27.1	11.38 *	15.2 **
Agriturf Fertilizer 10-10-10		9.8	8.23 **	10.8
Agriturf Fertilizer 15-15-15		14.2 **	16.7	14.7
Agriturf Fertilizer 10-20-10		11.3	26.68 ***	10.2
Agriturf Fertilizer 15-8-12		15.0	6.85 **	10.8 **
Agriturf Fertilizer 5-10-10		8.6 ***	10.9	8.3 **
AGWAY, INC.				
Agway Nutri-Bond 10-10-10		10.5	11.0	9.1 **
Agway Turfood Special 10-6-4		9.2 **	5.5 *	3.8
Agway Blend-Rite 10-20-20		10.0	17.61 **	21.5
Agway Turfood Special w/Weed Killer 10-6-4		9.3 **	5.8	3.7
Agway Turfood Special w/Weed Killer 10-6-4		8.4 **	6.5	4.4
Agway Nutri-Bond Ammoniated Corn Starter 10-20-10		11.1	18.35 **	11.4
Agway Greenlawn Plus Insect Killer W.I.N. 5.3% 21-5-7	5.1	21.4	6.5	10.2 ***
Agway Nutri-Bond Ammoniated 10-20-20		10.7	18.24 **	20.6
Agway Nutri-Bond Ammoniated 5-10-10		6.0	8.63 **	10.7
Agway Nutri-Bond Ammoniated 15-15-15		15.4	14.14 **	15.5
Agway Blend-Rite 15-8-12		13.9 **	8.7	13.9 **
Agway Turfood Regular 10-6-4		7.9 **	6.8	3.7
Agway Professional Hi-Density 32-5-7		34.2	5.6	5.7 **
Agway Blend-Rite 23-12-18		25.4	13.4	15.8 **
Agway Turfood 10-6-4		9.5	4.71 **	4.0
Agway Blend-Rite 19-19-19		20.3	25.43 ***	13.2 **
Agway Blend-Rite 15-8-12		13.9 **	8.0	12.9
Agway Nutri-Bond Ammoniated 10-20-10		9.5 *	23.3	9.2 **
Agway Nutri-Bond Ammoniated 10-20-10		10.1	19.13 **	11.2
Agway Greenlawn W.I.N. 5.5% 22-6-8	6.4	23.0	6.3	5.9 **
Agway Nutri-Bond Ammoniated 10-20-10		9.2 **	20.6	11.9

Mixtures Showing Deficiencies Exceeding Tolerances (Cont'd)

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
AGWAY, INC. (Cont'd)				
Agway Nutri-Bond Ammoniated 15-8-12		15.0	8.2	10.8 **
Agway Nutri-Bond Ammoniated 5-10-10		5.0	9.22 **	10.9
Agway Blend-Rite 15-15-15		13.9 **	13.70 **	16.3
Agway Nutri-Bond 10-20-20		10.7	19.10 **	20.2
Agway Blend-Rite 23-12-18		23.9	13.6	16.4 **
Agway Greenlawn 22-6-8		23.2	7.2	6.0 **
Agway Cran-Best 12-24-12		12.4	21.3 **	13.5
CROP PRODUCTION SERVICES, INC.				
C.P.S. Village Green 10-6-4 ..		8.5 **	6.1	5.2
Agrico Fertilizer 5-10-5		4.9	9.26 **	10.4 ***
Agrico Fertilizer 5-10-10		4.8	7.77 **	10.6
Agrico Fertilizer 10-10-10 ...		10.3	9.10 **	9.8
C.P.S. Fertilizer 5-10-10		5.7	10.8	8.6 **
C.P.S. Fertilizer 10-10-10 ...		9.2 **	10.4	10.0
C.P.S. Fertilizer 20-5-25		20.0	5.3	22.5 **
Agrico Fertilizer 5-8-30		6.3	8.6	28.3 **
Agrico Fertilizer 15-10-10 ...		15.9	11.7	8.7 **
C.P.S. Village Green 10-6-4 ..		8.3 **	6.0	4.3
Agrico Fertilizer 10-7-41		10.3	9.58 ***	34.8 **
Agrico Fertilizer 6-12-12		6.4	13.9	10.0 **
C.P.S. Fertilizer 18-5-9		14.6 **	4.7 *	9.7
C.P.S. Fertilizer 10-10-10 ...		9.9	13.35 ***	12.1
Agrico Fertilizer 5-10-5		7.0	11.1	9.6 ***
C.P.S. Fertilizer 8-24-16		8.0	22.38 **	20.5 ***
Agrico Fertilizer 28-7-14		25.8 **	7.9	12.9 **
Agrico Fertilizer 6-12-24		8.6	16.08 ***	17.8 **
Agrico Fertilizer 0-10-40			7.76 **	48.0 ***
ESTECH, INC.				
Gro-Tone Lawn Food W.I.N. 3.5% 23-5-5	0.76 **	19.5 **	4.9	8.1 ***
Suburban Fertilizer 5-10-10 ..		5.2	7.12 **	8.2 **
Gro-Tone Nitroganic W.I.N. 5.5% 6-2-0	4.3 **	4.7 **	2.1	
Perk-Up Plant Food 5-10-5		6.7	14.25 ***	3.2 **
Suburban Fertilizer 5-10-10 ..		5.7	7.61 **	10.1
Gro-Tone Plant Food 5-10-5 ...		5.7	8.92 **	5.1
Suburban Fertilizer 10-10-10 .		9.8	8.04 **	10.0
Suburban Fertilizer 5-10-10 ..		5.3	8.59 **	9.6 *
Suburban Fertilizer 10-10-10 .		8.0 **	6.67 **	8.9 **
Perk-Up 10-6-4		9.2 **	5.5 *	3.5 *
FAESY & BESTHOFF, INC.				
F. & B. Rose Food 8-10-4		8.7	15.50 ***	5.0
F. & B. Evergreen Food 7-7-7 .		7.3	10.36 ***	7.5

Mixtures Showing Deficiencies Exceeding Tolerances (Cont'd)

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
FAESY & BESTHOFF, INC. (Cont'd)				
F. & B. Garden Food 5-10-5 ...		4.8	11.9	7.5 ***
F. & B. Holly, Azalea, Rhododendron 5-10-10		7.1	11.6	6.6 **
F. & B. Only Natural Organic 5-5-5		9.4 ***	6.3	4.8
W. R. GRACE COMPANY				
Peters' Professional All Purpose 20-20-20		18.8 **	21.4	21.1
HOWARD JOHNSON ENTERPRISES, INC.				
Surety Vegetable & Flower Garden 5-10-5		3.9 **	7.41 **	7.0
LEBANON CHEMICAL CORP.				
Turf Master Spring/Fall 12-24-12		14.9	22.54 **	11.8
Lebanon A.C.R.E. W.I.N. 1.5% 9-5-3	2.2	10.9	7.71 ***	4.9
Lebanon Green Gold Re-Nu 10-18-10		10.2	16.34 **	12.2
Lebanon Green Gold Re-Nu 10-18-10		10.7	14.92 **	14.1 ***
Green Gold Crabgrass Control 11-23-10		13.4	21.06 **	10.3
Greenview 2 Way Winter Green 10-16-20		9.5 *	14.87 **	22.3
Greenview Green Power W.I.N. 7.5% 30-4-4	5.7 **	31.4	4.6	5.0
Greenview Green Power W.I.N. 7.5% 30-4-4	7.4	28.1 **	5.1	4.6
Green Gold Crab Control 11-23-10		12.9	19.83 **	11.7
Lebanon General Purpose Lawn Food 5-10-5		5.0	8.78 **	4.7
Lebanon Vegetable Garden Food 5-10-10		5.9	10.2	9.2 **
Green Gold Re-Nu Lawn Food 6-18-10		9.9	16.93 **	10.1
Lebanon Country Club 13-25-12.		13.3	23.96 **	12.5
Lebanon Country Club Professional W.I.N. 3.6% 12-4-8	4.7	10.6 **	4.9	8.0
Greenview Green Power W.I.N. 7.5% 30-4-4	7.7	32.3	4.0	3.3 **
Greenview Green Power W.I.N. 7.5% 30-4-4	7.4	28.5 **	4.4	5.9
Greenview Green Power W.I.N. 7.5% 30-4-4	7.2 *	29.0 **	4.3	4.9
Lebanon Fertilizer 10-20-20 ..		9.9	19.03 **	19.7
Green Gold Lawn Food 26-4-6 ..		24.9 **	5.0	7.6

Mixtures Showing Deficiencies Exceeding Tolerances (Cont'd)

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
LEBANON CHEMICAL CORP. (Cont'd)				
Lebanon Fertilizer 10-20-20 ..		4.8 **	13.29 **	12.3 **
Lebanon Multi-Purpose 10-10-10		10.7	10.9	9.0 **
Lebanon Vegetable Garden Food 5-10-10		5.6	9.9	8.4 **
LOFTS, INC.				
Lofts Weed & Feed 20-3-3		18.1 **	3.1	4.7
Lofts Lawn Food 28-3-8		30.5	3.3	6.4 **
MASSACHUSETTS NURSERYMEN'S ASSN.				
M.N.A. Turf - O - Ganic W.I.N. 5.0% 10-6-4	3.4 **	7.9 **	1.98 **	6.0
M.N.A. Country Gardener 5-10-5		6.7	6.48 **	4.6 *
M.N.A. Plant - O - Ganic 8-8-8		9.9	4.93 **	3.4 **
M.N.A. Plant - O - Ganic W.I.N. 5.4% 12-12-12	4.8 *	9.7 **	4.73 **	9.1 **
M.N.A. Country Gardener 5-10-5		5.0	11.6	9.1 **
M.N.A. Plant - O - Ganic W.I.N. 4% 8-8-8	4.4	8.7	5.82 **	8.4
M.N.A. Plant - O - Ganic W.I.N. 4% 8-8-8	4.2	9.6	14.8 ***	6.8 **
M.N.A. Country Gardener 5-10-5		2.7 **	8.44 **	8.5 **
M.N.A. Turf - O - Ganic W.I.N. 5% 10-6-4	4.9	14.1 ***	4.36 **	6.7 ***
M.N.A. Plant - O - Ganic 8-8-8		9.2	7.15 **	10.2
M.N.A. Country Gardener 5-10-5		4.2 **	8.50 **	7.4
M.N.A. Turf - O - Ganic W.I.N. 5% 10-6-4	3.2 **	10.0	7.2	4.3
M.N.A. Turf - O - Ganic w/Pre Emergent Crabgrass Control W.I.N. 5% 10-6-4	3.2 **	9.7	7.2	7.6 ***
MITCH'S NURSERY HOME & GARDEN CENTER				
Mitch's Professional Lawn Fertilizer 25-7-11		20.9 **	6.9	19.3 ***
OLD FOX CHEMICAL, INC.				
Old Fox Garden Pride Garden Food 5-10-5		6.6	8.00 **	5.8
Old Fox Fertilizer 7-7-7		5.9 **	6.6 *	9.9
Old Fox Fertilizer 10-20-20 ..		10.3	18.50 **	19.9
Old Fox Fertilizer 10-10-10 ..		11.7	9.30 **	14.2 ***
Old Fox Fertilizer 10-12-12 ..		6.6 **	11.8	14.2
Old Fox Fertilizer 15-10-10 ..		16.2	11.7	14.9 ***
Old Fox Fertilizer 15-8-12 ...		15.0	6.35 **	11.0 **
Old Fox Fertilizer 0-15-30 ...			12.41 **	26.5 **
Old Fox Fertilizer 0-25-25			21.88 **	26.4

Mixtures Showing Deficiencies Exceeding Tolerances (Cont'd)

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
OLD FOX CHEMICAL, INC. (Cont'd)				
Old Fox Fertilizer 4-16-20 ...		4.1	17.4	16.7 **
Old Fox Super Lawn Pride 10-6-4		9.6 *	4.61 **	4.7
Old Fox Lawn Pride 10-6-4		5.2 **	12.13 ***	11.9 ***
Old Fox Super Vegetable Pride 10-10-10		8.0 **	10.7	8.7 **
Old Fox Vegetable Pride 5-10-10		4.7 *	9.39 *	8.9 **
Old Fox Garden Pride Garden Food 5-10-5		4.7	9.03 **	10.2 ***
Old Fox Premier Shrub & Tree Food 6-10-6		5.0 **	6.51 **	8.2
Old Fox Premier Garden Food 5-10-5		6.0	6.28 **	7.1
Old Fox Fertilizer 15-15-15 ..		9.7 **	1.2 **	12.3 **
Old Fox Turf Food 10-6-4		10.5	4.8 **	5.4
Old Fox Garden Food 5-10-5 ...		7.7	5.9 **	6.3
Old Fox Estate Green 10-6-4 ..		7.4 **	5.6	4.3
Old Fox Turf Food 10-6-4		10.5	7.43	2.9 **
Old Fox Lawn Gro 10-6-4		6.4 **	0.86 **	8.1 ***
Old Fox Fertilizer 5-10-10-1.2		1.4 **	1.21 **	7.5 **
Old Fox Garden Food 5-10-5 ...		4.8	0.83 **	7.1
Old Fox Fertilizer 10-10-10 ..		9.2 **	8.95 **	9.4 *
Old Fox Fertilizer 15-15-15 ..		5.0 **	1.1 **	10.9 **
PARKER FERTILIZER COMPANY				
Parker's Fertilizer 10-10-10 .		11.7	14.33 ***	10.4
Parker's Fertilizer 5-10-5 ...		5.2	8.4 **	4.7
Servi-Star Garden Food 5-10-5.		6.1	8.33 **	5.3
Servi-Star Garden Food 5-10-5.		4.6	9.08 **	5.0
O. M. SCOTT & SONS				
Scotts Lawn Pro-Weed & Feed W.I.N. 10% 32-4-4	13.3 ***	32.9	4.3	4.9
Scotts Starter Fertilizer W.I.N. 4% 17-23-6	4.0	18.6	21.87 **	6.2
Scotts Weed & Feed W.I.N. 10% 32-4-4	14.3 ***	32.5	4.6	4.7
Scotts Weed & Feed W.I.N. 10% 32-4-4	13.5 ***	32.2	4.3	5.2
Scotts Lawn Pro Fertilizer W.I.N. 5.6% 37-3-3	9.1 ***	37.7	3.6	4.6
Scotts Lawn Pro Weed & Feed W.I.N. 10% 32-4-4	14.4 ***	32.2	4.6	5.0
Scotts Lawn Pro Step 4 W.I.N. 6.7% 31-3-10	10.2 ***	31.7	3.4	10.2
Scotts Lawn Pro Fertilizer W.I.N. 5.6% 37-3-3	8.9 ***	37.5	4.0	3.3
Scotts Lawn Pro Step 2 W.I.N. 10.6% 32-3-4	14.4 ***	33.0	3.2	4.8

Mixtures Showing Deficiencies Exceeding Tolerances (Cont'd)

Manufacturer & Brand	Nitrogen Found Water Insoluble	Nitrogen Found Total	Available Phosphoric Acid	Water Soluble Potash
O. M. SCOTT & SONS (Cont'd)				
Scotts Lawn Fertilizer W.I.N. 5.6% 37-3-3	8.7 ***	38.4	3.3	3.3
SEACOAST LABORATORIES, INC.				
Twin Light Starter Lawn Food 10-18-12		11.6	21.1	19.4 ***
STANFORD SEED COMPANY				
Old English Insect Control w/Fertilizer 18-3-5		20.7	3.1	4.2 **
Old English Weed Control w/Fertilizer 18-3-5		15.7 **	2.9	6.4
Old English Lawn Fertilizer 28-4-8		30.5	4.2	7.0 **
SWIFT AGRICULTURAL CHEMICAL CORP.				
Vigoro Liquid Plant Food 10-5-5		10.3	2.66 **	5.7
VALAGRA, INC.				
Valagra Fertilizer 10-6-4		14.7 ***	6.2	3.9
Valagra Fertilizer 20-5-10 ...		17.8 **	7.0	13.1
Valagra Fertilizer 25-5-10 ...		24.8	5.9	8.0 **
Valagra Fertilizer 10-10-10 ..		11.8	13.85 ***	16.1 ***
Valagra Fertilizer 15-15-15 ..		14.7	15.0	19.2 ***

* Within Tolerance ** Deficient *** Excessive

Nitrogen, Phosphoric Acid, and Potash Products

Manufacturer & Brand	Total Nitrogen	Available Phosphoric Acid	Water Soluble Potash
AGRITURF, INC.			
Agriturf Fertilizer 0-0-60			59.4 *
AGWAY, INC.			
Agway Urea 46-0-0	47.0		
Agway Urea 46-0-0	45.8		
Agway Urea 46-0-0	46.5		
Agway Triple Superphosphate 0-45-0		44.3 *	
Agway Triple Superphosphate 0-45-0		44.9	
Agway Triple Superphosphate 0-45-0		44.2 *	
Agway Muriate of Potash 0-0-60.5.			60.7
Agway Muriate of Potash 0-0-60.5.			60.0
Agway Muriate of Potash 0-0-60.5.			59.6 *
Agway Muriate of Potash 0-0-60.5.			59.5 *
ALLIED CHEMICAL COMPANY			
Ammonium Sulphate 21-0-0	21.3		
CROP PRODUCTION SERVICES, INC.			
Agrico Fertilizer 0-20-0		19.3 *	
C.P.S. Granular Superphosphate 0-20-0		19.7	
ESTECH, INC.			
Gro-Tone Bone Meal 0-12-0		24.95	
MASSACHUSETTS NURSERYMEN'S ASSN.			
M.N.A. Superphosphate 0-20-0		20.2	
OLD FOX CHEMICAL COMPANY			
Old Fox Fertilizer 0-0-22			21.1 *
TRANSNITRO, INC.			
Transnitro Urea 46-0-0	46.9		
Transnitro Urea 46-0-0	46.2		

* Within Tolerance

Processed Animal Manures

Manufacturer & Brand	Total Nitrogen	Total Phosphoric Acid	Water Soluble Potash	Moisture	Acid Insoluble Ash
AMERICAN HDWE. SUPPLY CO.					
Servistar Composted Cow Manure 1-1-1	1.16	0.95	1.21	45.0	34.7 **
ANDERSON ORGANIC: DIV. OF HYPONEX CORP.					
Fertilife Composted Cow Manure 1-1-1	1.14	1.01	1.36	30.0	37.1 **
HYPONEX CORPORATION					
Hyponex Composted Sheep Manure 1-1-1 ..	0.92	1.00	1.26	40.0	----
Hyponex Composted Cow Manure 1-1-1	0.99	1.00	1.30	38.0	----
Hyponex Composted Cow Manure 1-1-1	1.09	1.00	1.32	37.0	----
EARTHGRO, INC.					
Country Pride Composted Cow Manure 1-1-1	0.95	1.01	1.24	38.0	----
Country Pride Cow Manure Dehydrated 2-1-1	1.57	1.99	1.30	----	----
ROBERT N. MCCLELLAN & SON, INC.					
Bovung Dehydrated Cow Manure 2-1-2	2.20	1.91	1.50	28.0	20.0
Bovung Dehydrated Cow Manure 2-1-2	3.20	2.80	1.90	----	20.0
Bovung Cow Manure Dehydrated 2-1-2	1.37	1.62	1.42	20.0	32.3 **
Bovung Dehydrated Cow Manure 2-1-2	1.46 **	1.67	1.40 **	----	44.2 **
OCEAN FARMS, INC.					
Ocean Farms Dehydrated Cow Manure 2-1-2	1.32 **	0.87	1.20 **	----	45.7 **
YANKEE FERTILIZER CO.					
Super Gro-All Dehydrated Poultry Manure 100% Natural Organic 4-4-2	4.9	4.05	3.0	----	----
ZOOK & RANCK, INC.					
Earth-Rite "C" Compost Plus 3-2-2	3.0	3.4	0.52	----	----

** Deficient

Processed Sewage Sludge

Manufacturer & Brand	Water Insoluble Nitrogen	Total Nitrogen	Available Phosphoric Acid
MILWAUKEE METROPOLITAN SEWAGE DISTRICT			
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.2	6.6	2.6
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.2	6.4	2.5
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.3	6.6	2.6
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.2	6.4	2.3
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	5.9	6.3	2.2
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.0	6.4	2.7
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.3	6.7	2.0
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.4	6.7	2.2
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.2	6.6	2.5
Milorganite Activated Sewage Sludge 5.5% W.I.N., 6-2-0	6.2	6.5	2.8

Agricultural Lime Products

Manufacturer & Brand	Neutralizing Value Expressed in Terms of Calcium Oxide (%) Guaranteed	Found	Mechanical Analysis (%) Finer Than 100-Mesh	Finer Than 20-Mesh
ALLYNDALE CORPORATION				
Agricultural Lime High Magnesium	57.0	58.3	46.9	98.1
Allyndale Granular Lawn Lime	58.4	58.9	47.6	99.9
Allyndale Agricultural Lawn Lime	58.4	59.0	44.7	99.6
Allyndale Agricultural Lime High Magnesium	57.0	58.2	55.0	99.6
AMERICAN PELLETIZING CORPORATION				
Reneille Limestone Pellets.	48.0	53.2	----	----
LEE LIME CORPORATION				
Lee White Granular Dolomite Limestone	57.0	59.6	22.1	99.9
Lee Double Strength	82.0	82.1	98.3	99.5
Tobey Agra Hydrate	70.0	78.0	76.2	99.9
Tobey Agra Hydrate	70.0	69.9	63.0	97.6
Lee A.B.C. All Purpose Lime	82.0	83.4	98.4	99.9
Lee High-Mag fine Ground Limestone	57.0	59.6	49.9	99.6

1986 FEED

ADM Milling Co., Tax Dept., P.O. Box 1470, Decatur, Il 62525
ADM Processing A Div. of Anchor Daniels Midland Co., Tax Dept. P.O. Box 1470 Decatur, Il 62525
A & R Pet Food, Co., Inc., 91 Holt St., Buffolo, NY 14206
A. H. Robbins Co., Inc., 1407 Cummings Drive, P.O. Box 26609, Richmond VA 23261-6609
Agrico Inc., P.O. Box 298, Lebannon, PA 17042
Agway Inc., Box 4751, Syracuse, NY 13221
Agway Inc., Box 4933, Syracuse, Ny 13221- Country Foods
Alpha-Pet Inc., 4914 Dragett Ave, St. Louis, MO 63110
Allied Chemical, P.O. Box 1000R, Morristown, NJ 07960
Allied Chemicals, P.O. Box 6, Salvay, NY
Allied Fibers & Plastics, P.O. Box 1559, Hopewell, VA 23860
Almacs Inc., One Noyes St., East Providence, RI 02916
Alpo Petfoods Inc., P.O. Box 2187, Allentown, PA 18001
Alltech, Inc., 3031 Catnip Hill Pike Nicholasville, KY 40356
American Crystal Sugar Co., 101 NO. Third St., Moorhead, NN 56560
American Cynamid Co., P.O. Box 400, Princeton, NJ 08540
American Feeds & Livestock Co. Inc., RR #6, Box #33, Long Grove, Il 60047
American Feeds & Livestock Co. Inc., Box 4180, Suite 101, Long Grove, IL 60047
American Hoechst Corp., Agricultural Division, Route 202-206, North Somerville, Nj 08876
American Original Corp., P.O. Box 769, Seaford, Delaware 19973
Amway Corp., 7575 East Fulton Road, Ada MI 49355
Anheuser-Bush Raw Material Dept., Busch Place, St. Louis, MO 63118
Anitox Corp., 1855 Anitox Dr., Buford, GA 30518
Arcadian Corp. 1 Gatehall Drive P.O. Box 265 Parsippany, NJ 07054
Archer-Daniels- Midland Co., P.O. Box 1470, Decatur, IL 62525
Arlington Grain Co., 5 Depot Ave., Cranston, Ri 02920
Atlantic Feed Products Corp., 286 Secaucus, NJ 07094
Audubon Park Co., 49 Main Street, Drawer W, Akron CO 80720

BASF Wyandotte Cop., 100 Cherry Hill Rd., P.O. Box 181, Parsippany, NJ 07054
B&M Farms & Milling Co., 55 N. Sillyman St., Cressona, PA 17929
Barber & Bennet Inc., Box 430, Port of Albany, Albany NY 12201
Barzen International, P.O. Box 51, Stacey, MN 55079
Baymag Plant, 200 1144-29 Ave., N.E., Calgary, Alberta T2E-7PL
Bay-Mor Pet Feeds, 55 Mprjt Sillyman St., Cressona, PA 17929
Bay State Milling Co., 707 Grain Exchange, Minneapolis, MN 55415
Beacon Milling Co., Cayuga, NY 13034
Beatrice Grocery Products, Inc., 110-21st Avenue South, P.O. Box 58, Nashville, TN 37202
Beatrice Specialty Pet Products, P.O. Box 170, Nashville, TN 37202
Bernardston Grain Mills, River Street, Bernardston, MA 01337
Best Feeds & Farm Supplies, Rear of Union Ave., P.O. Box "J", Oakdale, PA 15071
Bi-Agri Lebannon, Rte 207, Lebanon, CT 06249
Bio Zyme Enterprises, Inc., 1231 Alabama St., Joseph, MO 64504
Borden Inc., Pet-Agri. Division, RR #1, Box 127, Elgen, IL 60120
Borden, Inc., Pet-Agri. Div., Pet/Vet Products, P.O. Box 396, Hampshire, IL 60140
Blue Star Foods Inc., P.O. Box 798, Council Bluffs, Iowa 51502
Bradford Associates, Inc. 191 Post Rd. West, Westprot, CT 06880
Bruckmans, 179 So. Broadway, Lawrence, MA 01843
. M. Brown's & Son, 205 Woodrow Ave., Sinking Spring, PA 19608
Brown Forman Distillers Corp., P.O. Box 1080, Louisville, KY 40201
umble Bee Seafoods, 1995 Bayfront, P.O. Box X-1017, San Diego, CA 92113
y Products, Inc., P.O. Box 7411, Wilmington, Del. 19803

CSF INc., P.O. Box 5192 Des MOins, IA 50306
Cadillac Pet Foods, 9130 Griffith Morgan Lane, pennsauken, JJ 08110
Caldwell Supply Co., Inc., 1515 Parkway Ave., W. Trenton, NJ 08628
Caldwell Supply Co., Inc., Valmont Industrial Pk., P.O. Box T Hazleton, PA 18201-0096
Calo Pet Foods, Div. of Borden, Inc., P.O. Box 388, Allentown PA 18105
Cambridge Products LTD. P.O. Box 1622 SSS. Springfield, MO 65805
Cargill Inc., Processing Group, Box 9300, Minneapolis, MN 55440
Cargill, Inc., Willow Grove, PA 19090
Cargill, Nutrina Feed Division, Beacon Feeds Box 5614 Minneapolis, MN 55440
Carnation Co., 5045 Wishire Blvd., Los Angeles, CA 90036
Carl S. Akey Inc., P.O. Box 128, Lewisbrurg, OH 45338
Carter-Wallace, Inc., Half Acre Rd., P.O. Box 418, Cranbury, NJ 08512
Central Conn. Co-Op Farmers Assoc.,Box "V", Buckland Sta., 10 Apel Pl, Manchester
C.H.B. Foods Inc., 772 Tuna St., Terminal Island, CA 90731
Champion Pet Foods, Inc. 210-10 Carter Drive West Chester PA 19382
Champion Valley Farms Inc., 6670 Low St., Bloomsburg, PA 17615
Char-Bone Corp., 1157 Willis Ave., Albertson, NY 11507
Char-Bone Corp., 2322 Grand Ave., Baldwin, NY 11510
Chenango Valley Pet Food, 10 West St., Sherburne, NY 13460
Cher-Ami Natural Pet Foods, Inc., Two East Ave., Larchmont, NY 10538
Church & Dwight Co., P.O. Box 369, Piscataway, NJ 08854
Clinton Corn Processing, Box 340, Clinton, IA 52732
The Coca Cola Co., P.O. Box 2079, Houston, TX 77001, Att. J. N. Touchstone
Commercial Rabit Growers Assoc. of Mass., Gore RD., Upton, MA 01568
Con-Agra Pet Foods Division, 6th & Elm ST., P.O. Box 938, Rolla, MO 65401
Con-Agra Inc., Grain Milled Invoicing, One Central Park Plaza, Omaha, NE 68102
Con-Agra Specialty Geed Products Co., 209 East Main, Ada, MN 56510
Con-Agra Inc., Specialty Feed Products Co., 876 Grain Exchange Bldg., Minneapolis, MN 55416
Conklin Co., Inc., 4660 W. 77th St., Minneapolis, MN 55435
Continental Grain Co., 277 Park Ave. New York, NY 10172
Continenetal Grain Co., P.O. Box 459, Libertyville, IL 60048
Comcor Inc., c/o Heath Science Ind., 200 Executive Dr., Brookfield, WI 53005
Corenco Corp., 525 Waburn St., Tewksbury, MA 01876
Corn Products (CPC Int. Inc.) Int'l Plaza, Englewood Cliffs, NJ 07632
Corn Sweeteners, Div. ADM Tax Dept., P.O. Box 1470, Decatur, IL 62525
Cyanamical Agricultural de Puerto Rico Inc., c/o M. Martin, P.O. Box 400, Princeton, NJ 08540
Cyto-Zyme Labs, 134 South 700 West, Salt Lake City, Utah 84104

D&D Suet Cake Co., Division of Health, 140 Mill St., Coopersville, MI 49404
Dawe's Laboratories, LTD., 7100 N. Tripp Ave., Chicago, IL 60646
Deep Run Packing Co. Inc., Deep Run Rd., 247, Dublin, PA 18917
Derby Feed, Co. Inc., 4-8 Caroline St., Derby, CT 06418
Diagnostic Data Inc., 518 Logue Ave., Mountain View, CA 94043
Diamond Shamrock Corp., 1100 Superior Ave., Cleveland, OH 44114
Diamond V. Mills, Inc., P.O. Box 4408, Cedar Rapids, IA 52407
Doane Products Co., Staff Supermarkets Assoc., P.O. Box 879, Joplin, MO 64802
Docktor Pet Center, Inc., 355 Middlesex Ave., Wilmington, MA 01887
Docktors laboratories Inc., Dundee Park, Andover, MA 01810
Dog Gon' Good Pet Food Co., 80 Roger's St., Lowell, MA 01853
Domain Inc., 201 N. Knowles Ave., P.O. Box 248, New Richmond, WI 54017
Dow Chemical Co., (The) 2030 Dow Center, U.S. Tax Dept, Midland, MI 48640
Dow Chemical Co., (The) 1803 Bldg, Midland, MI 48674
Dow Chemical Co., (The) P.O. Box 1706 Midland, MI 48640

Early Times Distillery Co., P.O. Box 1105, Louisville, KY 40201
Eastman Gelatin Corp., 227 Washington St., Peabody, MA 01960
Eastman Chemicals Div., P.O. Box 511, KIngsport, TN 37662
Eight-In-One Pet Food Prod. Inc., 100 Emjay Blvd., Brentwood, NY 11717
Elanco Products Co., 740 S. Alamba St., Indianapolis, IN 46285
Essential Minerals Inc., P.O. Box 619, Franklin, MI 48025
Evanger's Dog & Cat Food Co., Inc., 221 Wheeling Rd., Wheeling, IL 60090
Evans Milling Co., Inc., 1730 W. Michigan St., Indianapolis, IN 46222
John Ewing Co., 401 No. First St., LaSalle, CO 80645

FMC Industral Chemical Group Corporation, 2000 Market St., Philadelphia, PA 191
Farmer City Grain Co., P.O. Box 189, 201 W. North St., farmer City, IL 61842
Fast Fractions for Purses, Inc., P.O. Box 383, Randallstown, MD 21133
Fermented Products Inc., 905 So. Carolina Ave., Manson City, IA 50401
Fermented Products Inc., P.O. Box 1483, Mason City, Iowa 50401
Flory Milling Canning Co., Staff Supermarkets, Railroad Ave., Farmingdale, NJ 07
Food Center 312 Boston Road, N. Billerica, MA 01862
Foster Canning Company Inc, Railroad Ave., Farmingdale, NJ 07727
R.T. French Co., One Mustard St., P.O. Box 23450, Rochester, NY 14692

Gaines Foods Services, 250 North St., White Plains NY 10625, Attn. Rose C
Gaines Foods Inc., 660 White Plains Rd., Tarry town, NY 10591
General Mills Corp., Pkg Conven. Div., 275 Cliff St., Battles Creek, MI 49016
General Mills Inc., P.O. Box 15003, Minneapolis, MN 55415
Roy Goff & Co. Inc., P.O. Box 6248, Bridgeport, CT 06606
Grain Processing Corp., 1600 Oregon St., Muscatine, IA 52761
Great A&P Tea Co. Inc., c/o Perk Foods Co., 772 Tuna St., Terminal Island, Ca 9073
Green Acre Farms, 112 South Spruce ST., Nazareth, PA 18064
Gro-Kote Inc., 4019 Sebastopol Rd., Santa Rosa, CA 95401

Rolf C. Hagen, USA Corp., 50 Hampden Rd., Mansfield, MA 02048
HAP-EE Pet Food, 150 Reservoir Rd., Wollaston, MA 02170
The Chas. C. Hart Seed Co., 304 Main St., P.O. Box 9169, Weathersfield, CT 0610
Hartz Mountain Pet Foods, 700 South Forth St., Harrison, NJ 07029
Harvest States Cooperative, P.O. Box 43594, ST., Paul, MN 55164
Harvest States Cooperative, P.O. Box,64594, ST., Paul, MN 55164
Heartland Lysine, Inc. 8430 W. Bryn Mawr, Suite 650 Chicago, IL 60631
Heger Co., 2562 7th Ave. E., No. St. Paul, MN 55109
Heinold Feeds Inc., P.O. Box 377, 207 E. Mentor St., Kouts, IN 46347
Hi-Life Packing Co., P.O. Box 218, Rte. M-40, Hamilton, MI 49419
Hi-Life Packing Co., Box 1167, Elmhurst, IL 60126
Hill's Pet products, P.O. Box 148, Topeka, KS 66601
Hoffman La Tiche Inc., 340 Kingsland St., Bldg. 706, NUtley NJ 07110
Holland Pet Products P.O. Box 8064 Kentwood, MI 49508
Hubinger One Progress St. Keokuk, IO 52632
Hubbard Milling Co., 424 North Front St., Mankato, MN 56001

IBA Inc., Animal Health Div., 27 Providence Rd., Millbury, MA 01527
IAMS Company, P.O. Box 862, Lewisburg, OH 45338
Illinois Cereal Mill's, P.O. Box 220, 620 So. Jefferson Ave., Paris, IL 61944
Immuno Dynamics of Iowa, Intersection Hwys 141 & 169 P.O. Box 544, Perry IA 50220
Impro Products Inc., 3 Allamakee St., Waukon, IA 52172
International Bakerage, 3300 Northeast Expressway, Suite 1-M, Atlanta, GA 30341
International Minerals & Chemical Corp., 1331 So. 1st, P.O. Box 207, Terre Haute, IN 47808
International Minerals & Chemical 421 E. Hawley St. Mundelin, IL 60060
International Multifoods, Box 2942, Multifoods Tower, Minneapolis, MN 55402
International Salt Co., Clarks Summit, PA 18411
International Spike Inc., 817 E. Third St., Lexington KY 40405
International Stock Food Corp., P.O. Box 29, 533 Broad St., Waverly, NY 14892

I.S. Joseph Co., Inc., 777 Grain Exchange Bldg., Minneapolis, MN 55415

Jespy Inc., 200 E. Rosedale Ave., W. Chester, PA 19382

K & L Feed Mill Corp., Box 52, Route 32, Franklin, Ct 06254
Kal Kan Foods Inc., 386 E. 44th St., Vernon, CA 90058
Kaytee Products Inc., 242 E. Grand St. Chilton, WI 53014
Kellogg Inc., 322 E. Florida St., Milwaukee, WI 53201
King Neptune Sales Corp. 12 Water St., Suite 401 White Plains, NY 10601
Kitty Food Corp. (Hilton Seafood) 1437 Elliot Ave., W. Seattle, WA 98119

Lacrosse Milling Co., Div. of Tereson Co., P.O. Box Drawer "J" Cochrane, WI 54622
Lambert Kay, P.O. Box 418 Half Acre Rd., Cranbury, NJ 08512
Land O'Lakes Inc., Agricultural Services 2827 8th Ave. So., Fort Dodge, IO 50501
Landon Company Inc., Box 457 Delavan, WI 53115
Lauhoff Grain Co., P.O. Box 571, Danville, IL 61832
Libner Corporation 25 Commerce St., Norwalk, CT 06852
Lipman Marine Products Inc., P.O. Box 779, Gloucester, MA 01930
Lofts Seed Inc., 1 Chimney Rock Rd., P.O. Box 146 Bound Brook, NJ 08805
Liv-A- Snaps 4251 Fernwood St., Arden Hills St. Paul, MN 55112

Maine Manna Inc., Gorham, ME 04038
Maple Leaf Mills Co., Inc. Export Flour Div., 43 Junction Rd., Toronto, Ontario Canada
Marlboro Products c/o Peck Foods, 772 Tuns St., Terminal Island, CA 90731
Marnat Packing Co., P.O. Box 827, Bennettsville, SC SC 29512
Martin Maritta Basic Products, Executive Plaza, Hunt Vally, MD 21030
Martins Feed Mills Inc., Box 46 New Paris, ID 46553
Marschall Products, Miles Labs, P.O. Box 592 Madison, WI 53701
Mass Canning Corp. Rte. 44, Harding St., Lakeville, MA 02346
Merck & Co. Inc., P.O. Box 2000 Attn: R.R. Buck Rahway, NJ 07065-0914
Metaframe Cop., 231 40th St. Irvington, NJ 07111
Midstates Pet Corp., 18440 C.R. 18440 C.R. 42, Goshen, IN 46526
Milk Specialties Co., P.O. Box 278 WAter & Illionois Sts. Dunde, IL 60118
Miner-ol Co. Inc., So. Water St., Warsaw, IL 62379
Morton Salt Co., 110 N. WAcker Dr., Chicago, IL 60606
Mowat, Wilson & Co., Box 5171, Seven Oakes Station, Detroit, Mi 48235
Moyer & Son Inc., 113 E. Reliance Rd., Box 117, Souderton, PA 18964

Nabisco Brands Inc., East Hanover, NJ 07936
Nabisco Inc., Toledo Flour Mill, 2221 Front St., Toledo, OH 43605
Namolco Inc., Willow Grove, PA 19090
Naremco Inc., Box 1572 SSS, Springfield, MO 65805
National distillers Products Co., 120 Section Rd., Cincinnati, OH 45216
National Feeds of New England, P.O. Box 791 Merrimack, NH 03054
National Oats Co., 1515 H Ave. N.E. Cedar Rapids, IA 52402
National Starch & Chem. Corp., 1515 So. Dover St., Indianapolis, IN 46221
National Starch & Chem. Corp., P.O. Box 1084, Indianapolis, IN 46206
New Energy Co. of Indiana, 3201 W. Clavert St., P.O. Box 2289, So. Bend, IN 46680-2289
New England Serum Co., 239 Hewburyport Tpke, (Rt.1), Topsfield, MA 01983
Nor-Am chemical Co., 3509 Silverside Rd., P.O. Box 7495, Wilmington, Del. 19803
Northrop King Co., Linda Lipsey, P.O. Box 959, Minneapolis, MN 55440
Nutrena Feed Div., Cargill Inc., P.O. Box 9300 Dept. 14, Minneapolis, Minn. 55440
Nutrius Inc., Two Breeksville Commons, 8221 Breeksville Rd., Breeksville, Ohio 44141

Occidental Chemcial Co., Feed Prod. Div., 1122 East Highway 131, Jeffersonville, IN 47130
Occidental Chemical Co., Feed Prod. Inc., 5404 Cypress Center Fr. P.O. Box 25597, Tampa Fl 33622
P. B. Ohrstrom & Sons Inc., P.O. Box 964, Arlington Heights, Il 60006
Old Fox Chemical Inc., 94 Dexter Rd., E. Providence, RI 02914
Old Mother Hubbard Dog Food Co. Inc., 80 Rogers St., P.O. Box 1411, Lowell, MA 01853
OMYA, Inc., P.O. Box 3, Florence, VT 05744
Oyster Shell Products, P.O. Box 1225, Mobile, AL 36601

Pabst Brewing Co., 1000 No. Market St., Milwaukee, WI 53201
Pacific Molasses Co., One California St., San Francisco, CA 94111
Pacific Molasses Co., 333 Market St., Suite 1000, San Francisco, CA 94105
Paterson Tallow Co. Inc., P.O. Box 287 Jersey City, NJ 07303
Perkin Energy Co., P.O. Box 10, 1300 S. Second, Pekin, IL 61554
Perk Foods Co., 772 Tuna St., Terminal Island, CA 90731
Pet-Life/Hi-Life Packing Co., 875 North Addison Ave., P.O. Box 1167 Elmhurst, IL 60126
Piasa Pet Products, Inc., P.O. Box 938, Tolla, MO 65401
Pillsbury Co., Pillsbury Center 3526, Minneapolis, MN 55402
Pioneer Hi-Bred International Inc., 1206 Mulberry St., Des Moines, IA 50308
Pro-Ag-Inc., 2072 East Center Circle, Minneapolis, MN 55441
Pro-Pet, 218 E. Main St., Newark, DE 19711
Preston Kitchens, 1 Choptank Rd., P.O. Box 70 Preston, MD 21655
Provimi Inc., 99 Bartley Rd., Flanders, NJ 07836
Provimi Inc., R.R. #5 Box 61A, Watertown, WI 53094
Purina Mills, Inc., 8355 Eighth St., St. Louis, MO 63102
Purina Mills, Inc., 800 Chouteau Ave., St. Louis, MO 63164

Quaker Oats Co., (The) 345 Merchandise Mart Plaza, Chicago, IL 60654

Ralston Purina Co., checkerboard Sq., St., Louis, MO 63164
Redi Industries Corp., 301 Peninsula Blvd., Hempstead, NY 11550
Reward Co. Inc., P.O. Box 12548, El Paso, TX 79912
A. H. Robbins Co. Inc., 1405 Cummings Dr., Richmond, VA 23220
Rockford Farms, P.O. Box 4000, Chicago, IL 60654
Rytman Grain Co., RFD #1, Lebanon, CT 06249

San Francisco Bay Brand Co., 8239 Enterprise Dr., Newark, CA 94560
SDS Biotech Corp., 7528 Auburn Rd., P.O. Box 348, Painesville, OH 44077
Seaboard Allied Milling Corp. P.O. Box 2969, Shawnee Mission, KS 66201
Seaboard Seed Co., P.O. Box 117, Bristol, IL 60512
Joseph E. Seagram & Sons Inc., 508 West High St., Lawrenceburg, IN 47025
Schenley Distillers, Inc., 12770 Merit Dr., Suite 600, Dallas, TX 75251
Schenley Distillers 36 E. Fourth St. Cincinatti, OH 45202
Scottie Pet Food Co., 80 Rogers St., Lowell, MA 01853
Shafer Seed Co., Oakes, No. Dakota 58474
Shawvan International Ltd., 310 Huehl Rd., Northbrook, Il 60062

J.R. Short Milling Co., P.O. Box 866, Kankakee, IL 60901
Slentz-McAllaster Inc., P.O. Box 38 Lewis, KS 67552
Sohio Chemical Co., P.O. Box 628 Lima, OH 45802
Source Inc. 101 Fowler Rd., No. Branford, CT 06471
South Point Ethanal, Old Rte. 52, P.O. Box 1004, South Point, OH 45680
Southern Cotton Oil Co., P.O. Box 1470 Decauter, IL 62525
Southern of darlington Co., 383 Washington St., P.O. Box 70, Darlington, SC 29532
Southern of Rocky Mount Inc., 600 Wilkenston St., P.O. Box 109, Rocky Mount, NC 27801
Springfield Sugar & NE Grocers, P.O. Box 638 Northboro, MA 02138
John P. Spuria & Sons, 1 Gardner Rd., So. Ashburnham, MA 01466
A.E. Staley Mfg. Co., 2200 E. Eldorado St., Decatu, Il 62525
Standard Milling Co., 1009 Central St., Kansas City, MO 64105
Standard Seed Co., P.O. Box 366 560 Fulton St., Buffalo, NY 14240
Star-Kist Foods Inc., 582 Tuna St., Terminal Island, CA 90731
Star Market Co., 625 Mt. Auburn St., Box 293 Cambridge, MA 02138
Stop & Shop Supermarkets c/o Perk Foods, 772 Tuna St., Terminal Island, CA 90731
Strongheart Products Co., Div. of Doric Corp., P.O. Box 2009 Kansas City, KS
Sunflower Inc., P.O. Box 169, Grandin, ND 58038
Sunshine Feed Mills, P.O. Box Drawer "S" Red Bay, AL 35582
Superbow Pet Foods INc., 57-18 48th St., P.O. Box 86 Maspeth, NY 11378
Superior Pet Products 470 Atlantic Ave., Boston, MA 02210
Sure Crop Intenational, P.O. Box 179, New City, NY 10956
Spencer Kellogg, Div., Textron Inc., 120 Delaware Ave., Buffalo, NY 14240
Stinson Canning Co., 66 Bowery St., Bath, Me 04530
Sweet Life Prod. c/o N.E. Grocer Supply, 175 Bearfoot Rd., Northboro, MA 01532

Topco Assoc., Inc., 7711 Gross Point Rd., Skokie, Il 60077
Tenneco Minerals, A Tenneco Co., 3707 FM W. suite, Houston, TX 77068
Tetra Sales (USA) Div. of Warner Lambert Co., 201 Tabor Rd., Morris Plains, NJ 07950
Tri-Mutual Inc., 8500 Pillsbury Ave. S. Minneapolis, MN 55420
Triumph Pet Industries P.O. Box 100, Hillburn, NY 10931
Troy Chemical Div., Y-Tex Corp., P.O. Box 1450, 1825 Big Horn Rd. Cody WY 82414

United Cooperative Farmers Inc., 339 Broad St., Fitchburg, MA 01420
Universal Grain Co., of NJ 425 south St., Newark, NJ 07105

Ventura Grain Co., 148 Longmeadow Rd. Taunton, MA 02780
Veterinary Nutritional Assoc., 229 Wall St., Huntington, NY 11743
Vigortone AC Products Div. Beatrice Foods, P.O. Box 1230 Cedar Rapids IA 52406
Vital Nutrition Products, Inc., 25 Laurel Rd. Rockey Hill, CT 06067

WGM-Hydro 270 Lawrence Ave., Aouth San Francisco, CA 94080
Wagnor Bros. Feed Corp. P.O. Box 26 Farmingdale, NJ 11735
Wakefern Food Corp. 600 York St., Elizabeth, NJ 07028
Wardley Products Co. Inc., One Aquarium Dr., P.O. Box 2515, Secaucus, NJ 07094
Wayne Feed Div., Continental Grain, P.O. Box 459, Libertyville, IL 60048
H.K. Webster Co., Inc., P.O. Box 8, Lawrence, MA 01842
Wells Pet Food Corp., 617 South D St., Monmouth, IL 61462
Rose-Wells P.O. Box 426, Mequon, WI 53092
Wilson's Corn Products Inc., Rochester, IN 46975
Wisconsin Brand, Inc., Rte. 2, Box 214-B, Iola, WI 54945

1986 Commercial Fertilizer Registrations

ABS Greenworld Inc., 82 Cheywood Dr. Sumerset, NJ 08873
Affordable Products, Inc., P.O. Box 2297, Green Bay, WI 54306
Agway, Inc., P.O. Box 4741, Syracuse, NY 13221
Agriturf, Inc.P.O. Box 143, So. Deerfield, MA 01373
Alpha Sales Co., 388 Evans St., Williamsville, NY 14221
Allied Chemicals Corp., P.O. Box 1000R, Morristown, NJ 07960
Allied Fibers & Plastic Co., P.O. Box 1559, Hopewell, VA 23860
Atlantic Cement Co., Inc., P.O. Box 3, Ravena, NY 12143
Blue Circle Atlantic Inc.,P.O. Box 3, Ravena, NY 12143
Central N.E. Chemical Corp., P.O. Box 918, Hagarstown, MD 21741
CF Industries, Inc., Salem Lake Drive, Long Grove, IL 60047
Chemagron Industries P.O. Box 4767, Chicago, IL 60680
Chevron Chemical Co., 940 Hensley St., Richmond, CA 94804
Continental Shelf, Pleasant Dr., Lockmere, NH 03252
Crop Productions Services Inc., Box 7013, Wilmington, DE 19803
C.S.I. Chemical Corp., P.O. Box 39, Boundurant, IA 50035
Cytozyme Laboratories, Inc., 134 South 700 West, Salt Lake City, Utah 84104
Emerald Green, Inc. 1149-D St. Rt. 131 Milford, Ohio 45150
Estech General Chemical Corp., P.O. Box 233, Portland, CT 06480
Farm Bureau, 115 Washington Ave., P.O. Box 227, Soundertown, PA 18964
Gardinier Inc., P.O. Box 3269, Tampa, FL 33601
W.R. Grace & Co., Agricultural Chem. Group, P.O. Box 368, Wilmington, NC 28402
Golden Harvests Agric. Services, Walnut Street, St. Albans, VT 05478
Green Mountain Fert., P.O. Box 156, Milton, VT 05468
HirSeore Plant Food Co. Inc., P.O. Box 775 3175 Oregon Pike, Lancaster, PA 17604
Int'l Minerals & Chem. Corp., 421 East Hawley, Mundelein, Ill 60060
J.I. Holcomb Mfg. Co., 4415 Euclid Ave., Cleveland, OH 44103
Lebanon Chemical Corp., P.O. Box 180,Lebanon, PA 17042
Leffingwell Chemical Co., 111 So. Berry St., Brea, CA 92621
John D. Lyon Inc., 143 Alewife Brook Parkway, Cambridge, MA 02140
Na-Churs Plant Food, 421 Leader St., Marion, OH 43302
Occidental Chem. Agri. Products, 5404 Cypress Center Dr., Suite 210, Tampa, FL 33609
Old Fox Chemical Co., 94 Dexter Road, East Providence, R.I. 02914
Sun Phosphate Co., P.O. Box 369, Dunnellon, FL 32630
Texknit Service and Supply DBA The Continental Shelf Pleasant Drive Lochmere, NH 03252
John Wojtowicz, Inc., 56 Plant Road, Clifton Park, N.Y. 12065

ASB Greenworld Inc., 82 Cherrywood Drive, Somerset, NJ 08873
ASB (Canada) LTD, Pointe Sapin, Kent CO., N.B., Canada EOA 2AO
Ancient Age Distilling Co., Leestown Road, Frankfort, KY 40601
Agway Inc.,Box 4933 Syracuse, N.Y. 13221
Agrico Chemical Co., Box 7013, Wilmington DE 19803 (Name chge Crop Productions)
Agrico Chemical Co., P.O. Box 3166, Tulsa, OK 74101
Agri Turf Inc., 124 Elm St., P.O. Box 143, So. Deerfield, Ma. 01373
Agro-Chem. Inc., 11150 W. Addison St., Franklin Park, IL 60131
Alaska Fish Fertilizer Co., P.O. Box 757, Renton, WA 98057
AllJack & Co., 423 Amelia St., Plymouth, MI, 48170
Allied Corp. Chemicals Co., P.O. Box 2251R, Morristown, N.J. 07960
Allied Fibers & Plastics, P.O. Box 1559, Hoepwell, VA 23860
Amax Chemical Corp., 402 So. Kentucky Ave, Suite 600, Lakeland, FL 33801
American Cyanamid Co., P.O. Box 400, Princeton, N.J. 08540
American Cyanamid Co., Plant Food Div., One Cyanamid Plaza, Wayne, NJ 07470
American Hoechst Corp., Rte. 202-206 North, Somerville, N.J. 08876
American Pelletizing Corp., Box 3628, 7200 Hickman Rd., Des Moines,IA 50322
Amway Corp., 7575 East Fulton Rd., Ada, MI 49355
Anderson's, The, P.O. Box 119, Maumee, OH 43537
Anderson Peat Organic (Old Fort Ind.) Inc., 2013 S. Anthony Blvd., Ft. Wayne, IN 46801
Aquarium Pharmaceuticals Inc., 113 N. 7th St., Perkasie, PA 18944
Arex Corp, P.O. 2571, 1301 Dothan Rd., Bainbridge, GA 31717
Armatron International (Flowtron) 2 Main St., Melrose, MA 02176
Atlas Fish Fertilizer Co., 865 Lind Ave S.W., Renton, WA. 98055

B.F.C. Chemicals, 4311 Lancaster Pike, P.O. Box 2867, Wilmington, DE 19805
name chge NOR-AM
J.T. Baker Chemical, 222 Red School Lane, Phillipsburg, N.J. 08865
F.A. Bartlett Tree Experts Co., P.O. Box 3067, Ridgeway Sta., Stamford, CT 06905
Bendien B.V., Thierensweg 10, 1411 Ex Naarden, Netherlands
Bio-Gen Int'l Inc., 2946 East 39th St., Rapid City, SD 57701
Black Leaf Products Co., 667 N. State St., Elgin, Il 60120
Britt Tech. Corp., P.O. Box 216, Britt, IA 50423
Broadleaf Industries Inc., 6150 Lusk Blvd. Ste. B103, San Diego, CA 92121
W. Atlee Burpee Company, 200 Park Ave., Warmminster, PA 18974

C.F. Industries, Salem Lake Drive, Long Grove, IL 52576
CIL Inc., P.O. Box 1900, Courtright, Ontairo L8G 321
Caldwell & Jones,Inc., 46 Adams St., Manchester, CT 06040
Carefree Garden Products, P.O. Box 383, Chicago, IL 60185
Celex Corporation 443 Amelia, Plymouth, MI 48170
Central N.E. Chemical, P.O. Box 918, Hagerstown, MD 21741
Chemlawn Corp., P.O. Box 397, Wickford, R.I. 02852
Chevron Chemical Co., 1 Crossroads of Commonea, Ruling Meadows, IL 60008
Chevron Chemical Co., 15049 San Pablo Ave., Richmond, California 94804-0010
CIBA-GEIGY Corp., Agri. Div., P.O. Box 11422, Greensboro, N.C. 27419
Cleveland Gypsum Co., 2100 W. 3rd, Cleveland, OH 44113
Clinton Nursery Products, Inc., P.O. Box 932,114 W. Main St., Clinton, CT 06413
Conklin Co. Inc., 4660 W. 77th St., Minneapolis, MN 55435
Conrad Fafard, Inc., P.O. Box 3033, Springfield, Ma. 01101
Crawford Garden Supplies, 589 Atwells Ave, Providence, R.I. 02909
Crop Production Services, Box 7013, Wilmington, DE 19803
Cytozyme Lab Inc., 134 South 700 West, Salt Lake City, Utah 84104

D.H. & R. Co., Inc. P.O. Box 333, LaPorte, IN 46350
Davey Tree Expert Co., The, 1500 N. Mantua St, Kent, OH 44240
Domestic Fertilizer, 1750 17th St., Paris, KY 40361
Dow Chemical Co.,US Area Tax, 2030 Dow Ctr, Midland, MI 48640
Dragon Chemical Corp., 7033 Walrond Dr.NW, P.O. Box 7311, Roanoke, VA 24019

Eagle Picher Ind., Inc., Box 648, Fairway, Neb. 68352
Eagle Picher Inc., Hwy 80 West, P.O. Drawer 629, Mineola, Tx 75773
Eagle Picher Ind., P.O. Box 550, Joplin, MO 64802
Earthgro, Inc., Rte 207, P.O. Box 143, Lebanon, CT 06249
Electra Plant Food, Universal Chem. Co., P.O. Box 341, W. Lynn, MA 01905
Emerald Green, Inc., P.O. Box G, Milford, Ohio 45150
Emerald Isle LTD, 2153 Newport Rd., Arbor, MI 48103
Enzy-Tech, Inc., 1135 Kansas Ave., Modesto, CA 95351
Epsoma Co., The, 6 Espoma Rd., Millville, N.J. 08332
Estech Inc., P.O. Box 233, Portland, CT. 06480
Estech Inc., 340 Interstate N. Pkwy, Suite 150, Atlanta, GA 30339

Farm Bureau, 115 Washington Ave, P.O. Box 227, Souderton, PA 18964
Fertrell Co., P.O. Box 265, Bainbridge, PA 17502
Faesy & Besthoff Inc., 143 River Rd., Edgewater, N.J. 07020
Fer-Mel Corp., 304 Main St., Wethersfield, CT 06109
(Four) All Green Co., Box 501, Bricktown, N.J. 08723

Gardena, Inc., 6031 Culligan Way, Minnetonka, MN 55345
Gardinier Inc., P.O. Box 3269, Tampa, FL 33601
Glorion Corp., 366 No. Broadway, Jericho, NY 11753
Goldmar Corp.,P.O. 27074,180 W. Ostend St., Baltimore, MD 21230
Golden Harvest Agric. Serv., Walnut St., St. Albans, VT 05478
W.R. Grace & Co., Terra Lite Products, 62 Whittemore Ave., Cambridge, Ma. 02140
Green Mountai Fertilizer Inc., P.O. Box 156, Sunset Ave., Milton, VT 05468
Greenlife Products Co.Inc., P.O. Box 72, West Point, VA. 23181
Grow Consumer Products, Inc., 1354 Old Post Rd., Havre de Grace, MD 21078
Grow-Flourish Inc., Hardwick, VT. 05843

Chas. C. Hart Seed Co., P.O. Box 169, Wethersfield, CT 06109
A.H. Hoffman, Inc., Landisvillie, PA 17538
Holland Bulb Prod., P.O. Box 540, Sylacaduga, AL 35150
Hyponex Co. Inc., P.O. Box 4300, Copley, Ohio 44321
Hy-Trous Crop, 3 Green St., Woburn, MA 01801

International Spike Inc., 817 E. Third St., Lexington, KY 40592

JPA (Jiffy Products of America), 1400 Harvester Rd., P.O. Box 338, W. Chicago,IL 60185
Howard Johnson's Enterprises, Railroad Ave., P.O. Box 67, Viroqua, WI 54665
Jungle Growth Products Inc., 2805 Columbia St., Torrance, CA 90503

K-W Manufacturing Co. Inc., 800 South Marion Rd., Sioux Falls, SD 57106
Kenco Chemical & Mfg. Corp., P.O. Box 6246, Jacksonville, FL 32236
Kerr-McGee Chemical Corp., Kerr-McGee Center, 135/1126, Oklahoma, OK 73125
K-Mart Corp.% Rockwell Chemical Co., P.O. Box 809, W. Caldwell, N.J. 07006
K-Mart Corp., 3100 W. Big Beaver, Troy, MI 48084
Knox Gelatin Inc., 800 Sylvan Ave., Englewood Cliffs, N.J. 07632
Koos Inc., 4500 13th Court, Kenosha, WI 53140

L & G Agri. Tech Inc., 5 Militia Road, R.D. 1, Whitehouse Station, NJ 08889
Lakeshore Equipment & Supply Co., P.O. Box 16915, 2005 Lake Rd, Rocky River OH 44116
Lebanon Chemical Corp., P.O. Box 180, Lebanon, PA 17042
Leffingwell, 111 So. Berry St., P.O. Box 1880, Brea, CA 92621
Lesco, Inc., 20005 Lake Rd., Rocky River, OH 44116

Lofts Pedigreed Seed Inc., Chimney Brook Rd., Bound Brook, N.J. 08805
Loncala Phosphate Co., P.O. Box 766, High Springs, Fl 32643
John D. Lyon Inc., 143 Alewife Brook Parkway, Cambridge, Ma 02140

J.J. Mauget Co., P.O. Box 3422, Burbank, CA 91504
Mass Nursery Men's Assoc., 715 Boylston St. Boston, Ma 02116
Merrick Foods, P.O. Box 99, Union Center, WI 53962
Miller Chemical & Fertilizer Corp., P.O. Box 333, Radio Road, Hanover, PA 17331
Milwaukee Metroplitan Sewerage Commission, 735 No. Water St., Milwaukee, WI 53202
Mother Nature's, 10 Goodwell Trail, Box 1055, Avon, CT 06001
Robert N. McClellan & Son's, 2103 Washington St., Assinippi, Ma. 02339

Na-Churs Plant Food Co., 421 Monroe St., Marion, OH 43302
Nassau Garden, Inc., 366 No. Broadway, Jericho, N.Y. 11753
New England Lawn Services, Inc., P.O. Box 338, Main Office, Shrewsbury, MA 01545
New Plant Life Div. NPL Inc., P.O. Box 45, LaPorte, IN 46350
Nitrochem Inc., 2055 Peel St., Suite 800, Montreal, Quebec H3A 1VA
Nor-Am Chemical Co., 4311 Lancaster Pike, Wilmington, DE 19805 - name chge BFC Chem.
Nutrico Inc., 92 Howard Ave., Bridgeport, CT 06605

J. B. Ogilvie Inc., 1 Greendale Drive, Caledonia, Ontario, NOA1AO
P.B. Ohrstrom & Son's Inc., P.O. Box 964, Arlington Heights, IL 60006
Old Fox Chemical, Inc., 94 Dexter Rd., East Providence, RI 02914
Old Fox Lawn Care,Inc., 94 Dexter Rd., East Providence, RI 02914
Optiflora Inc., 1501 Lischey Ave., P.O. Box 8158, Nashville, TN. 37207

Parker Fertilizer Co., Inc., P.O. Box 540, Sylacauga, AL 35150
Parrott-Agra Industries, 16 Sunny Side Ave., Stanford, CT 06902
Paygro, Inc., 11000 Huntington Rd., So. Charleston, OH 45368
PBI/Gordon Corp., P.O. Box 4090, 1217 West 12th St., Kansas City, MO 64101
Pecos Agricultural Corp., P.O. Box 1712, Pecos, TX 79772
Peters Fertilizer Prod., W.R. Grace Co., 570 Grant Way, Fogelsville, PA 18051
Plantabbs Corp., P.O. Box 397, Timonium, MD 21093
Plantco Inc., 314 Orenda Rd., Bramalea, Ontario, Canada L6T 1G1
Plant Marvel Labs, Inc., 371 E. 16th St., Chicago Heights, IL 60411
Plant Research Labs, 2525 Dupont Dr., P.O. Box 18498, Irvine, CA 92713
Pro-Lawn Products Inc., Attn: Henry Plate, Box 4908, Syracuse, N.Y. 13221

Quaker Oats Co., The, Merchandise Mart Plaza, Chicago, IL 60654

RTO Plus Corp. P.O. Box 986, Roswell, GA 30077
Ra-Pid-Gro Corp., 88 Ossian St., P.O. Box 370, Dansville, N.Y. 14437
R.G.B. Laboratories, Inc., 1531 Charlotte St., Kansas City, MO 64108-1580
Rhone-Poulenc Inc., Agrochemical Div., 3500 DePauw Blvd., Suite 1031, Indianapolis, IN 46268
Ringer Corp., 6860 Flying Cloud Dr., Eden Prairie,MN 55344
Rockland Chemical Co., Inc. P.O. Box 809, W. Caldwell, N.J. 07006
P.L. Rohrer & Bros., Inc., P.O. Box 25, Smoketown, PA 17576
Ross Daniels, Inc., 1720 Fuller Rd., P.O. Box 65430, West Des Moines, IA 50265

S & D Products, Imc., P.O. Box 66, Prairie du Chien, WI 53821
Schultz Co., 11730 Northline Ind. Drive, Maryland Hts., MO 63043
O.M. Scott & Son's Co., Marysville, OH 43041
Sea Harvest Co., 47 Winston Grove, Toronto, Ont. M8Y-2L1
Sears, Roebuck & Co., Dept. 632-71, Sears Tower, 20th fl. Chicago, IL 60684
Seed Corporation of America, 180 W. Ostend St., P.O. Box 27174, Balt. MD 21230
Sierra Chemical Co., 1001 Yosemite Dr., Milpitas, CA 95035
Sohio Chemical Co., P.O. Box 628, Lima, Ohio 45802
Southern Importers, Inc., P.O. Box 8579, Greensboro, NC 27419
Stern's Miracle-Gro Products, Inc., 800 Ft. Washington Blvd. Ft. Washington, NY 11050

Stern's Nurseries, Inc., 607 W.Washington St., Geneva, NY 14456
Stim-U-Plant, Inc., 2077 Parkwood Ave., Columbus, OH 43219
Sudbury Labs, Inc., 6 October Hill Rd., Holliston, Ma 01746
Surity Fertilizer DBA Howard Johnsons Ent. Inc., Viroqua, WI 54665
Synthetic Labs, Victory Lane, P.O. Box 460, Dracut, MA 01826

Tetra Sales Div., Warren Lambert, 201 Tabor Rd., Morris Plains, NJ 07950
Texknit Service and Supply Corp., DBA The Continental Shelf Pleasant Dr., Lochme
Tru Green Corp., 111 Alderman Dr., Alpharetta, Ga 30201

1986 LIME REGISTRATIONS

Agway Inc., Box 4741, Syracuse, NY 13221

Allyndale Corp., Allyndale Rd., E. Canaan, CT 06024

American Pelletizing Corp., Box 3628, Des Moines, Iowa 50322

Atlantic Cement Co., Inc., P.O. Box 3, Ravena, NY 12143

The J.E. Baker Co., P.O. Box 1189, York, PA 17405

Basins Inc., Box 96, Gouverneur, NY 13642

Blue Circle Atlantic Inc.,P.O. Box 3 Ravena, NY 12143

Cianbro Corp. Old Rte 17, Union, ME 04862

Conklin Limestone Co, Sand Rd., Canaan, CT 06018

Conklin Limestone Co, P.O. Box M Lincoln, RI 02865

Dragon Products Co., RT. 1, Box 191, Thomaston, ME 04861

Essential Minerals, Inc., 30400 Telegraph Rd. Suite 308, Birmingham, MI 48010

Faesy & Bestoff Inc., 143 river Rd., Edgewater, NJ 07020

Goulet Trucking inc., 27 S. Maple St., Hadley, MA 01035

A.H. Hoffman, Inc., Landisville, PA 17538

Lee Lime Corp., Quarry Rd., Lee, MA 01238

Leffingwell Chemical Co., 111 So. Berry St., Brea, CA 92621

Lime Products Corp., P.O. Box 357, Union, ME 04862

Limestone Products Corp. of Amer., P.O. Box 217, Sparta, NJ 07871

N.E. Silica Inc., 1370 John Fitch Blvd., So. Windsor, CT 06074

North Country Aggregate, P.O. Box 96, Gouverneur, NY 13642

Omya Inc., P.O. Box 3, Florence, VT 05744

Pfizer Inc., Minerals, Pigments & Metals Div., 260 Columbia St., Adams, MA 01220

Pfizer Inc., P.O. Box 667, Canaan, CT 06018

United States Typsum Co., 101 So. Wacker Dr., Chicago, IL 60606